ILLINOIS

Education

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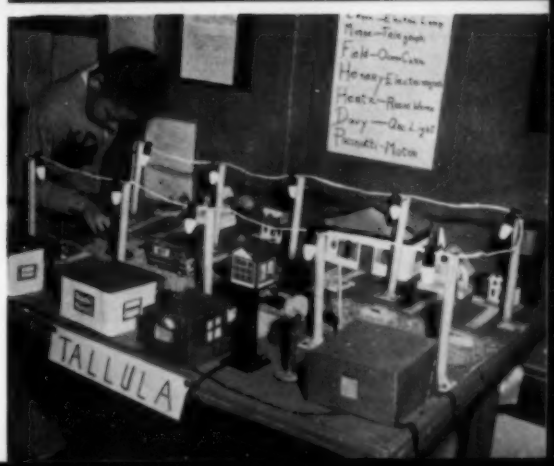
Elementary Science Can Be Meaningful



Mr. Nickell

Quadruple Quadrennium

(We Look Back in Order Better to Look Ahead)

By VERNON L. NICKELL
Superintendent of Public Instruction

After 16 years of state service, and almost 50 years of service to the profession, Mr. Nickell is retiring. This is his farewell message to the teachers of Illinois.

FROM the day I first faced a group of country school pupils from the teacher's side of the desk until now, much water has gone over the dam. That span of time is just short of 50 years. During that time we have suffered through two world wars and the Korean conflict. Education in Illinois has progressed notably during the interval.

I had some ideas which I believed to be good for public education in Illinois when I first entertained the thought of seeking the state office. I was superintendent of schools at Champaign at that time. Whatever gains I have enjoyed as state superintendent would not have been possible without a highly qualified professional staff to discharge the duties of the office and provide the leadership which has helped local school districts to do their own jobs better. To this group must be added the governors, the general assemblies, PTAs, the IASB, lay people interested in good schools, subject-matter groups, and many other groups. It has been the work of thousands, working toward better educational opportunities for the youth of our state.

By law, the state superintendent is charged with the responsibilities of administering statutes as enacted by the General Assembly and signed into law by the governor. During my 16 years as state superintendent, the duties thus prescribed by legislative action have been augmented in a manner previously unparalleled. As a result, our staff has of necessity continued to grow. However, the programs which have prompted this much-increased staff have been great benefits for education.

Talking about programs brings me to organizations. It is a source of personal satisfaction to have watched an ever-growing cooperation among various organizations, both professional and lay, in the furtherance of educational progress. This development seems to have come with particular emphasis during my tenure in state office, and the end product has been wonderful for education.

Special Education Unified

The programs which were enacted during my first term were significant. In fact, there has been a sufficient time elapse since their enactment that we sometimes tend to treat them as commonplace because we have had them so long. The special education program was unified into a single coordinated operation instead of being a collection of several individual items. A so-called unification bill put all special education laws into one. Our office unified the program. Today the state special education program is a model for the entire country. During this term, a commission of the legislature codified all school laws, giving us our first "School Code."

To those of us professionally associated with education, the completion of the revised *Illinois Curriculum and Course of Study Guide* was a notable milestone, thanks to members of my supervisory staff and able committees of school people. As a matter of policy during my entire tenure, we have always welcomed constructive help from any individual or organization, because such help was indicative of the interest of citizens-at-large in affairs of education. Such interest can not but benefit education. We exerted every effort to keep citizen interest high. Without it, anyone in education is handicapped.

In the early '40s, Congress enacted the Federal School Lunch Act, which named chief state school officers as administrators of the program in each state. This started with a meager beginning, until today it is a major facet of our education program that has grown beyond all proportions of the initial stages.

A program was started during my second term which has had reverberations throughout the midwest—the school district reorganization program. The program was necessary to equalize educational opportunities and distribute costs more equitably. What to me was most important is that the schools, which belong to the people, should remain independent, free to make their own choices to reorganize without dictation.

During my tenure, it became more apparent that our concept of educa-

tion was greatly expanded. It was realized more than ever that certain fields which many regarded as "luxury" or "extracurricular" were not that at all. The alarming number of persons who were not physically fit for service to society and country set forth their own challenges. As a consequence, our supervisory staff was augmented to extend the educational program. In time, supervisory directors were set up to cover the fields of audio-visuals, libraries, art, music, health, physical education, safety, conservation, and transportation.

It also became evident that the educational process was one which did not terminate with the attainment of a certain age. It prompted increased activity for adult education programs. A supervisory staff member devotes a portion of his time to the development of this program.

Quality Has Increased

A tremendous increase in numbers of children and youth attending school brought on the problem of securing sufficient qualified teachers —with emphasis on qualified. To meet this, we created a position of full-time supervisory assistant in teacher recruitment, which has brought excellent results. These services have not only given us more teachers but better-qualified teachers. With each passing year, our index of qualification of teachers continues to rise, and the result can only be better education. Of course there is more to be done – much more.

The nature of the office as that of a service facility continued to be manifest in our every operation. Our concept of supervision was one of cooperation as opposed to a simple procedure of inspection and check-off. By cooperation, I mean the members of the supervisory staff meeting together after visitations with school officials, teachers, and even patrons to discuss the results of the supervisory findings. For supervision has its justifications only in a resultant improvement in classroom instruction. Without that, all is lost.

The forerunner of the Illinois Curriculum Program was launched before World War 2 as a project of the Illinois Secondary School Principals Association. The war forced a temporary abandonment of the program, but it was revived after war's end. When the association reopened its project and came up with its findings, it was obvious that the scope and importance of the program involved was so great that a legislative enactment for its provision as a part of my office was the answer. Both the late Governor Green and the legislature listened with interest as the program was spelled out. The necessary enactment followed. It might be said that the acceptance of the program by our schools has been nothing short of sensational. Indeed, materials issued by this program have been requested by all other states and territories and by foreign countries the world over.

Emanating as a by-product of World War 2 was the creation of the General Education Development testing program, designed for veterans; members of the armed services prior to March 1, 1948; and civilians over 21 years of age who had not completed high-school work. Under the GED program, eligible persons who had not completed their high-school work could receive the equivalent of a high-school diploma after passing satisfactorily the tests which were administered. Socially, this was of tremendous importance. It permitted countless numbers to gain admittance to colleges and universities and enabled many others to attain job opportunities which were predicated upon receipt of a high-school diploma.

Retirement System Improved

Much improvement has been made in the teachers retirement system. The office has been equipped with modern business machines, enabling the staff to keep affairs current.

The legislature has become increasingly aware of and sympathetic toward public education and its needs. During my tenure, the state, through legislative enactment, has materially increased its amounts in helping pay the costs of common-school education in Illinois. When I first went into office, the distributive fund was slightly in excess of $31,000,000. Now it is $227,000,000. At this writing, our School Problems Commission has taken under advisement a further sizable increase for presentation to the forthcoming 71st Illinois General Assembly.

Aid For Junior Colleges

State aid was provided for normal schools operated by a school district. State aid has also been provided for the first time for public junior colleges, in the amount of $200 per 30-semester-hour pupil.

An important function of the office is coordinating civil defense in Illinois schools. The coordinator works with state and federal agencies to develop civil defense programs affecting all schools. The civil defense activity was climaxed by the development of a "Storm Warning Plan for Schools." The plan has since been adopted nationally.

Perhaps one of the most far-reaching changes in the administration of school business saw the dissolution of township school trustees in favor of seven-member county boards of school trustees. The county superintendent became the ex-officio board secretary. This took place in all but three counties – Cook, Madison, and St. Clair. The new county boards became bodies politic. Under this new set-up, school business concerned with detachment proceedings, approval of treasurers bonds, etc., has been handled with more efficiency, expedition, and elimination of duplicative details. Lawful expenses of county boards of school trustees are paid by the state, as are salaries of county superintendents of schools.

More recently, the legislature has enacted a reimbursable driver-education program as part of Governor Stratton's over-all safety program. The driver-education program is administered through this office, and only recently I approved the first statewide claim for reimbursement to 388 participating high-school and unit districts. The legislature has also

(Continued on page 204)

MECHANIZATION IN SURFACE COAL MINING

Where coal is located near the surface of the ground, it is recovered by surface mining—often called strip or open pit mining—rather than the usual underground method. Surface mining accounts for about one-quarter of our bituminous coal production.

The first step in this process is to remove the layer of dirt, or overburden, covering the coal. This is done by giant power shovels which, like the one shown here, can take 90-ton bites and dig 100 feet deep. (Another such monster, weighing as much as 1,600 automobiles, can take 105 tons at a gulp.) Sweepers or scrapers then clean the surface of the exposed seam and small power shovels remove the coal, load it into trucks that haul it to the cleaning plant.

In hilly areas with thick overburdens, auger mining is often used. In this case, the side of the coal seam is exposed and huge horizontal augers bore as deep as 200 feet into the seam to bring out the coal.

This mechanization of our country's coal mines has so increased the productivity of the American coal miner that he now produces nearly 11 tons per day compared with 6.77 tons in 1950. Coal operators continue to invest millions of dollars annually in mechanization, for the American coal industry must plan and prepare now in order to meet the growing energy demands of the future.

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from cover... to cover

OUR COVER this month is devoted to projects which can help to make elementary science meaningful for boys and girls. In the top photo, a primary pupil from the Oakford School feeds the "guests" in an insect cage which the first- and second-graders made of screen wire and tin pie plates. Experiments in air pressure are demonstrated by Greenview fourth-graders, in the middle photo. An upper-grade student at Tallula (bottom photo) straightens out a traffic problem in the "model town" which the class built, complete with electric street lights, as a culmination of a unit on electricity. The photos are by W. Stewart Williams of the IEA staff. For the complete story of Menard County's science program, turn to page 180.

SCIENCE is featured in two other articles this month—one on up-grading elementary science, on page 183, and the other on the type of education necessary for the proper training and development of a future scientist. It is on page 184.

A FAREWELL MESSAGE from your state superintendent appears on the inside cover. Mr. Nickell looks backward on 16 years of state service, as he stands on the threshold of his retirement. I am sure that all of you will read his message with warm hearts and good wishes.

INCOME TAX time looms near. Those of you who have deduction problems as a result of educational expenses will find some help in the discussion by Mr. Stoneking, beginning on page 190. The author includes some pertinent questions and answers.

TEACHER LOAD is the subject of this month's study unit, beginning on page 197. A classroom teacher, an administrator, and a faculty member from a teacher-training institution have teamed up to present some of the current thinking on this problem.

TV PHYSICS course, "Continental Classroom," has earned a special citation by the Thomas Alva Edison Foundation in recognition of "distinguished public service in the interests of education." For a report on the nationwide popularity of the course, see page 201.

IEA-NEA HONOR ROLL report forms will go out this month in the *IEA Newsletter*. Administrators should watch for them, and return the completed forms to this office by Feb. 1 for inclusion in the March issue of ILLINOIS EDUCATION. Reports received after that date will appear in April.

—The Editor

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Francine Richard, Editor
Joan Truckenbrod, Editorial Associate
L. R. Grimm and C. E. Vick, Contributing Editors
Irving F. Pearson, Consulting Editor

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ELECTRICITY works for these upper-grade youngsters at Petersburg's First Ward School as they demonstrate a telegraph, an electric motor, a flasher signal, and an operating magnetic crane. Students constructed these projects in John Greene's seventh- and eighth-grade class.

—Tallula photos by Pauline Meyer; all others by W. Stewart Williams.

The opportunities in a rural environment help Menard County teachers

Make Elementary Science Meaningful

TEACHERS in the Menard County elementary schools, with the help of their principals and the county superintendent, have taken advantage of the abundance of available materials and the natural interest of children in their surroundings, to build a meaningful science program for all eight grades.

Although they do not have science laboratories or expensive equipment, these teachers feel that they—as all rural-area teachers—have a unique opportunity. For much of the material to be used in the science classroom can be gathered first-hand by the youngsters from nearby yards, ponds, fields, and paths. It is easy to create and maintain pupils' interest in natural phenomena which they encounter in their everyday lives.

For instance, the Athens fifth-graders wondered about the weeds which grew in the yards and gardens, and along the roads. Where did they come from? No one planted them; why were there so many? Why did some kinds return year after year in the same places? Their curiosity about their environment led them into a unit of study on plants: those which are useful and those which must be destroyed; how plants adapt themselves to the environment; by what various methods seeds are scattered. Several of the room's young naturalists brought in buckeyes and heads of the teasel. The class used resource materials to discover that some seeds have protective coverings, and how these help the plants reproduce themselves. Pupils learned that some seeds fly through the air; others ride, slide, or tumble. They discovered that some plants grow in the same places year after year; other plants will grow in the small cracks of a sidewalk.

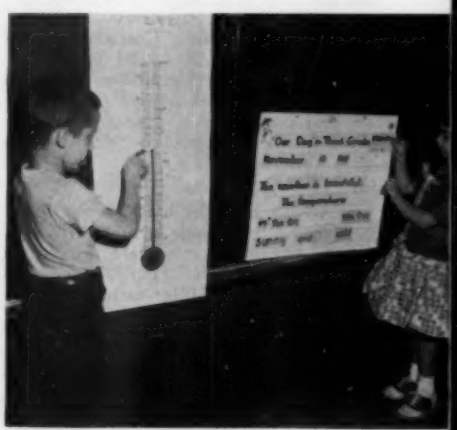
Class members collected some 20 common plants and learned to identify them. They also learned how each plant adapted itself to its environment, whether or not it was useful to man, how it could be controlled, whether it caused an allergy or other reaction.

Culmination of the unit was a nature hike led by the teacher, Mrs. Betty Canterbury, along nearby roads and into the woods—giving students the opportunity to test themselves on the recognition of plants and to see them growing in their natural habitats.

Middle-grade students at Tallula collected such plants as milk weed and jimson, counted the seed pods per plant and the seeds per pod, and were amazed to learn the great number of seeds which one of these plants could scatter if left uncontrolled.

This study of plants is carried throughout the eight grades, adapted to the interest and ability levels of each grade. Fourth-grade students at Petersburg's First Ward School brought materials from home to make a terrarium. They put sand and soil in a large-mouthed gallon jar; planted moss, ivy, fern, begonia,

RIBBON THERMOMETER is adjusted by one third-grader in Petersburg's Third Ward School as another pupil fixes the daily weather chart.



Material for this article was submitted by Lucille Raffety and Lillian Dierks, Tallula; John Greene and Juanita Gerieta, Petersburg, First Ward; May Finley, Petersburg, Third Ward; Letitia Gerdes, Oakford; Agnes Ingham and Eva Wilson, Greenview; and Dennis Nachtnebel and Betty Canterbury, Athens. Pauline Meyer, Menard County superintendent, also contributed.

violets, and wandering Jew; added a cricket, grasshopper, earthworm, and grub worm; watered the soil; and covered the jar with a saucer. The jar is kept in a shady part of the room, where students are able to study the growth of the plants and the activities of the animals.

The teacher, Mrs. Juanita Geriets, said the pupils also prepared an aquarium, adding plants and water animals according to what they had learned about the balance of nature.

Seasonal Changes Studied

Seasonal changes and their effects on plants and animals attract the interest of all youngsters, grades one through eight. First-graders can observe the changes in trees and other plants as summer changes to fall, and fall changes to winter. Middle-grade youngsters enjoy collecting "signs of fall" and "signs of spring" for displays and bulletin boards. Pupils in the upper grades study in more detail the adaptation of plants and animals to environmental changes.

Students of Dennis Nachtnebel's class—grades six, seven, and eight at Athens—have discovered that all of today's living plants and animals are the result of adaptations which have taken place through the centuries. A continuing study through the three grades begins with prehistoric times and the formation of the earth and its inhabitants.

Sixth-graders do research, make reports, and collect pictures of prehistoric times. In the seventh grade, dinosaurs and tyrannosaurs "come to life" in pictures, murals, clay models, and shadow boxes depicting life during the dawn of history. Written summaries explain individual or group work.

The eighth-grade students make a thorough study of the formation of the world, the beginnings of mountains, and changes created by the elements.

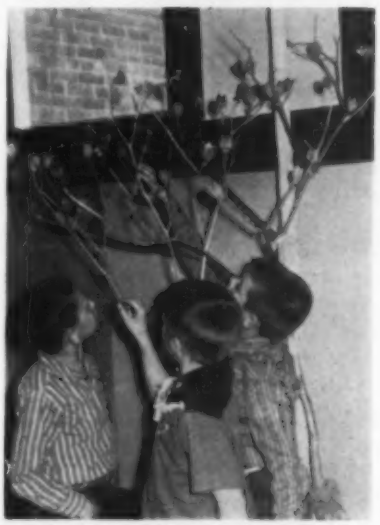
Collection and identification of rocks and minerals at all grade levels help youngsters understand the formation and content of the earth's crust.

At Oakford School, Mrs. Letitia Gerdes' first- and second-graders study the animals of their own time —where they live, how they move, what they eat, and how they adapt to seasonal changes.

An insect cage, made of screen wire and tin pie plates, holds live butterflies, garden spiders, grasshoppers, a praying mantis, walking stick, toads, and caterpillars. The boys and girls must find out what each "guest" likes to eat, and feed it. They can observe the toad eating flies or burying itself in the wet sand; watch the garden spider make egg sacks and then die; or study the caterpillar as it forms a cocoon. A moth or butterfly may emerge from this cocoon in the spring.

Pond water from nearby is placed in wide-mouthed jars, along with some water plants, and the youngsters use small tripod microscopes to

POND ANIMALS, collected nearby, are studied through a microscope by a pupil in Letitia Gerdes' first- and second-grade class at Oakford.



ONE JIMSON WEED such as this one will be reproduced many times, these boys learn, as they count 45 seed pods and 631 seeds in each pod. They are pupils in Lillian Dierks' fourth- and fifth-grade class at Tallula grade school.

ROCKETS are fascinating, even when made of a pop bottle and cork, and propelled by vinegar and baking soda. Chemistry kit at left was assembled by Agnes Ingham's sixth-grade class at Greenview Grade School for $1.60. At lower right, Athens fifth-graders identify common plants which grow along the roads, during a nature hike led by their teacher, Betty Canterbury, foreground.

study the pond life scarcely visible to the naked eye – transparent flat worms, round worms, tiny snails, minute shrimp. Larger residents of the pond aquarium have included crayfish, tadpoles, water beetles, the larvae of mayflies and dragonflies, and minnows.

Eggs of toads and frogs are kept in the jars, and pupils can watch as they hatch into tadpoles. An acorn containing a worm, a piece of wood eaten by termites, a leaf covered with tiny eggs emphasize that some animals eat plants–as a continuing study of the pond aquarium indicates that some animals eat other animals.

In studying ways animals prepare for winter, the pupils learn that some birds go south, and some stay here–and that it is important to feed the birds which stay here. Youngsters bring milk cartons, aluminum-foil pie plates, string, and spools to school, and construct bird feeders. As they feed the birds throughout the winter, boys and girls have a good opportunity to study them at close range.

A Ribbon Thermometer

Changes in the weather are studied in other ways. The third grade in Petersburg's Third Ward School boasts its own thermometer –made of cardboard and red and white ribbon. Each day a pupil reads the correct temperature from an outdoor thermometer; then he raises or lowers the red ribbon "mercury" of the room thermometer so that all of the youngsters can see what the temperature is. A weather chart gives other information about the weather – whether it is sunny or cloudy, raining or snowing, warm or cool.

At Tallula, the fourth- and fifth-grade class has a large outdoor thermometer provided by a local grocer. The class bought two small thermometers (40 cents each), so that they can take the temperature on the shady side and on the sunny side of a tree; on the north, south, east, and west sides of the school building; in the school office and in the janitor's room in the basement; behind the bookcase and on top of the shelves; on Mary's desk and in Jim's desk. Comparative temperatures and the reasons for them are discussed.

Pupils watch the cloud formations, discuss types of clouds, and then use cotton to form them on light blue construction paper.

The students have constructed a wind indicator with soda straws, a paper feather, and a pin. A coffee can and a ruler serve as a rain gauge. A catsup bottle, a one-holed rubber stopper, and a plastic straw were used to make a barometer. Students made a weather mural; each member wrote a story of his travels as an imaginary "raindrop."

The teacher, Mrs. Lillian Dierks, is also the sponsor of the Audubon Junior Club, and says that the Audubon Society is an excellent source of information, experiments, and activities adaptable to many units of science and to all grade levels.

Discussions of weather conditions and changes can often lead to questions about air and air pressure. A number of experiments demonstrating air pressure and how air works for man's benefit were worked out by members of Eva Wilson's fourth grade at Greenview. The youngsters learned by means of these experiments – using simple materials brought from their homes–that air has weight, that air pressure is equal on all sides, that carbon dioxide will put out a fire, that air expands as it gets warmer, and that moving air in their homes helps to keep them comfortable.

Experiments in Electricity

Simple materials from home or dime-store also serve the seventh- and eighth-grade students in Petersburg's First Ward School as they conduct experiments in electricity. John Greene, their teacher, begins the study of electricity by illustrating the behavior of two bar magnets as they attract and hold metal objects such as thumb tacks and nails. North and south magnetic poles demonstrate attraction and repulsion, then students are led to understand how these properties cause an electric motor to operate.

(Continued on page 205)

BANDAGING is part of the first-aid unit in the Tallula seventh and eighth grade. Middle photo, first-grader at Petersburg's Third Ward School explains seasonal changes. Tree at left is made of real leaves. Murals and clay models bring prehistoric animals "to life" in Dennis Nachtnebel's upper-grade class at Athens, photo at right.

We are in the midst of a reappraisal of science programs. Changes will be made. These suggestions should help you see that any changes are a service to science and society, and to the youngsters you teach.

Let's Up-Grade Elementary Science!

By NELSON F. BEELER

Professor of Science, State University Teachers College, Potsdam, N.Y.

OF COURSE science can be taught better in the elementary school! (It can be taught better in colleges and universities, too, as anyone knows who has been in college science classes recently. The undergraduate aptly calls some college science courses 3-D—Dull, Dry, and Difficult.) Just how will we go about up-grading elementary science?

We can give elementary science the same status as the other subjects. One way to do this is to set up a series of science experiences which progress in difficulty of concept from grade to grade. This is already done in several available science textbook series. Let us make these books available to children. While we are using the present texts, let us find ways to make better ones.

We can provide experiences with actual scientific equipment. This does not mean that the simple materials from the child's environment are to be forgotten. But meters, microscopes, aquaria, and other apparatus can not all be improvised. We learn science by handling the tools of science. Let us provide these tools for children.

We can supply the classroom teacher with a fund of petty cash for science equipment and supplies. A lot of good science is taught in American schools only because it is underwritten by dedicated teachers. Too frequently the teacher buys the dry cells, the wire, the balloons, and a host of other "easily obtained" things because the process for getting them through the channels of the school office is too complex, too time-consuming, or downright embarrassing. Some of the dollar-a-year-per-pupil which should be appropriated for science supplies should be available to the teacher for those science materials needed for an exciting project at the exact time that the interest is highest.

We can emphasize that science is measurement. To watch an electromagnet pick up tacks is an observation. To measure the effect of increasing the number of turns in the coil can lead to a generalization of far-reaching importance. Measurements should be made in the metric system whenever it is possible to do so. By the time he reaches high school every American child can be versed in this system of measurement common to the sciences and to a good part of the civilized world in its ordinary commerce.

We can tie arithmetic in with science. One function of the scientist is to establish relationships. Some of the simple relationships are expressed in numbers—the more involved ones need mathematical equations. We can begin early to show the inherent dependence of science on mathematics.

We can help teachers prepare science lessons through in-service workshops. Such workshops should be run by good science teachers with both a flair for science knowledge and a feeling for children. Many teachers who had no elementary science themselves just do not realize what a "shot in the arm" a good science program can be.

We can provide science consultants. People like this can help to assemble materials, get information, help with the science concepts, and in numerous other ways provide stimulating science class experiences. These consultants must be prepared in greater numbers by our colleges. They must be people who believe that elementary science is just as important to the country as the production of guided missiles or bobby pins or pure research in any of the formal sciences. They must feel that the citizenry thinks so too.

We can call on child development specialists to keep watch on the science program. The use of these specialists can help us to be sure that the needs of children are served, that potential abilities are not squandered, but that impossible tasks are not forced on children in the name of the new Golden Calf.

We can take another look at science fairs and congresses. For instance, we should ask ourselves:

To what extent are the projects presented truly scientific in tone and in implementation?

Are we letting children get awards for projects thrown together the night before the fair?

Are we using the science fair to judge teachers' rather than children's scientific creativity?

Are we giving science awards to projects which are merely pleasant displays or hobby shows?

Are we wasting time building displays which teach nothing besides giving a false impression of what scientific investigation means?

We can talk to children's librarians and to bookmen to find out what supplementary books are available in the sciences. We can make a judicious choice from among these science books written especially for children and have them at hand so

This is an excerpt from an article, "Next Steps in Elementary Science," which appeared in the April, 1958, issue of *The National Elementary Principal*, and is reprinted with permission.

that children can readily use them. We can ask teachers to spend some time browsing in this children's science literature so that they will know the right book for a particular child at the time when the book will make a significant difference in the child's outlook on science.

We can carry out some research on available science books for children. For instance we should be asking ourselves questions such as these:

Which science books attract children? Why?

How much do children retain from their reading?

To what extent do the books actually stimulate further reading, discussion, and experimentation?

We can plan more science experiences of the problem-solving type. Within the problem-solving situation children can then be made aware of the many facets of scientific thinking. They can learn to recognize an assumption, a hypothesis, a theory, a partial generalization. They can learn that there is no one "scientific method" but only "doing one's darndest with one's brains, no holds barred"—and find it stimulating fun.

We can suggest some kinds of science experimentation to be carried out at home. Parents must be made aware of the science program and what we are trying to do with it. When a parent thinks that his child is not reading well, he comes to school and asks, "How is Johnny doing in reading?" No one ever asks, "How is Johnny or Jane doing in science?"

If the day should come when a parent does ask it, we can be ready to say, "Why, just fine. He likes it. He works hard at it. He is learning a lot. Even if he never turns out to be a practicing scientist—and a lot of people don't, you know—he will know how to judge worthwhile science when he sees it. It's funny, but a child can learn a lot of science and be well-adjusted at the same time. Of course, this is true for some adults who pursue science for a living, isn't it?"

Let's get on with up-grading science. It will be a valuable contribution to American life.

Not narrow specialization in science, but a broad fundamental education with emphasis on reasoning and understanding is necessary for

THE TRAINING

In our increasingly technological civilization, science is an increasingly "cultural" subject; a person ignorant of science is not really an educated person. Therefore there should be more science for everyone — somewhat more numerous courses; distinctly more comprehensive courses; and much more intellectually challenging courses with more attention to logical organization, to the interrelations of different fields, and to the significance of ideas.

Every citizen should have some real understanding of the importance of science in the contemporary world, at least a decent inkling of the nature of research, and an appreciation of the scientific worldview. It is my belief that these are achieved better by courses *in* science than by courses *about* science.

Special Preparation Needed

In addition to these cultural aspects of science, the student with scientific aptitudes and aspirations needs special preparation. Neither in high school nor in college should this special preparation be "narrow specialization." Among the informed guesses about the technological advances in the next generation, the only absolutely certain prediction is that there will be *unexpected developments;* to train students to do the things that are being done now in the way they now are being done is to train them to be back numbers in the near future.

In an age of startling new discoveries, the only adequate preparation is a broad and thorough background in the fundamentals of science to form a basis for the unpredictable new specializations which will arise as new problems appear. Probably this can be done best in courses designed especially for science students —although such courses should not be closed to other bright students who desire this more rigorous discipline just for cultural development.

These beginning scientists must gain a thorough understanding of the subject matter; and the process of gaining this understanding is the best way, if not the only way, to acquire the discipline, skills, and attitudes discussed in this article.

On the other hand, the emphasis in high school or below should be less on the acquisition of a particular body of information than on the skills of acquiring information and applying knowledge. It is better to limit the quantity of subject matter to an amount which can be done well—logically, rigorously, thoughtfully, and with abundant problems of increasing difficulty. Facts are important and those which are part of the material covered should be treated with respect and learned well; but "complete coverage" can be left for college, for more advanced courses, for outside reading, and for on-the-job training—or for the encyclopedia.

Probably the most important subject in the training of scientists is mathematics; and the most important skill to be learned in the study of mathematics and science is that of analyzing and solving problems. The "story problems," which baffle so many students, are almost the only type of problem met in science or in daily life. Hence, more attention should be given to teaching students how to handle these.

Facility in solving problems involves both formal technique (which can be taught) and intuition (which can be gained only by experience). Formal technique involves the basic mathematical operations, of course. My experience is that these usually are taught relatively well.

Another aspect which needs to be taught as soon as "story" problems

By FRANCIS E. THROW
Assistant Director, Physics Division
Argonne National Laboratory, Lemont

OF A SCIENTIST

are met in grade school arithmetic is the systematic *written* statement of a problem in a form suitable for mathematical solution. The principal difficulty in solving story problems is that the student literally "does not know what he is talking about." The first step in the solution often is a diagram showing the relevant information and the relation between the known and unknown quantities. In any case the relevant quantities should be identified and listed in logical and accessible form. This statement of the given quantities should include their units of measurement. Next the pertinent work statements in the problem must be expressed in the form of equations. When the purpose of the problem is to derive a formula, the equation obtained as an answer should be "interpreted" by translating it into a sentence.

Although I believe these general principles need to be taught more systematically and explicitly than they have been, still it must be emphasized that (as good teachers have known all along) there is no substitute for practice and experience.

Especially in science, the students should be taught to look for reasons, connections, methods of attack, and the significance of things instead of merely learning a jumble of facts. Poincare has said, "A collection of facts is no more a science than a pile of bricks is a house." Laws and principles should be assimilated by seeing that they "make sense" rather than by parrot-like memorization.

Communication Skills

However, a knowledge of science is by no means an adequate preparation for the work of a scientist. For one thing, a scientist must be able to communicate his results to others. If the scientist can not explain what his research has accomplished, he has wasted his time and his employer's money and facilities in doing it. Employers and supervisors quickly tire of reading, or listening to, badly presented reports. This obviously calls for a thorough training in English grammar and composition and in speech.

Drawing Is Communication

Slightly less obvious is the importance of drawing. The message in scientific pictures and diagrams differs from that of the pictures in an art gallery—but both alike seek to show the pertinent information and relationships and to suppress distracting irrelevancies and nonessentials. Both kinds of art make effective use of abstract symbols.

Another form of communication, which commonly is not recognized as such, is mathematics. Precise quantitative statements and arguments usually are given best in mathematical form. Hence the written and oral discussions of the physical sciences must incorporate mathematical expressions and derivations into a coherent structure with the verbal parts. There is a special "mathematical English" designed to do this nicely; it is discussed, for example, in the *Manual of Style of the American Institute of Physics*. Effective use of mathematics as a medium of communication also involves translating from equations to sentences and from sentences to equations, as discussed.

Scientific reports must be logical and grammatical; the illustrations (graphs, diagrams, and photographs) should be plain and neat, should make their points clearly, and should be an integral part of the discussion; the mathematics should connect firmly into the text. This is a demanding form of expression; it is not learned without guidance, drill, and constructive criticism.

Hence, the science teacher must insist on good writing and illustration, and teachers of English and of drawing should encourage and assist the student to express scientific ideas well. Perhaps textual and lesson materials need to be provided for the teaching of scientific writing.

It should also be emphasized that if scientists are to make contact with the educated public, the public must be trained in scientific *reading*. The quantitative arguments, which are so essential in the physical sciences, often are condemned to almost-dishonest superficiality or grotesque clumsiness if not even the simplest mathematics can be used. This is not to deny that the mathematics should be illuminated with penetrating word statements; but even popular magazines ought to be free to use a bit of simple algebra when it is needed—and it is little short of a national disgrace, that the pages of a well-known scientific journal have to be closed to even the simplest mathematical argument.

Moreover, scientists must have an understanding of government, economics, sociology, and history if they are to discharge their responsibility in our increasingly technological civilization. Already many have been drawn into government and industry, and the trend appears to be accelerating. Finally, a scientist needs an appreciation of the fine arts—literature, music, painting, etc.

Personal Development

In addition to all this, the scientist is a person. This valid insight of the progressive movement in education needs to be retained in spite of the reaction against its unfortunate misapplications. Social adjustment is important—but it is *not* a substitute for academic training, nor vice versa. The primary function of a school is to train minds. There is no better way to "teach students" than to "teach subjects" well and thoroughly *to* students. Habits of logical thought, perseverance, neatness and carefulness, and conscientious effort are learned in this as in no other way.

Participation in athletics is valuable not only for bodily exercise but also for recreation, fellowship, and

training in sportsmanship. However, I think these objectives are attained best in intramural sports for fun; emphasis on the varsity team tends to reduce most students to mere spectators, and sportsmanship tends to be sacrificed to a desire to win at any cost.

In all these activities each student should come to recognize his abilities and to face his weaknesses, to overcome the weaknesses insofar as possible, and to use his strong points to compensate for them. Thus the student should not be shielded from the results of laziness, carelessness, or even inability. Of course, the weaknesses should be pointed out in a tactful, kind, and helpful way—not harshly and destructively.

Attitudes

The last, and one of the most important, needs of our future leaders is a proper set of attitudes. For the most part these are transmitted by the teacher's example and by his insistence on high standards of work and behavior. For example, cheating should be treated as an intolerable breach of social conduct—not as normal behavior. Schools should, of course, cooperate with home and church in instilling such aspects of character as integrity, responsibility, and public spirit; but their main effort should be directed toward the group of attitudes for which the school bears the primary responsibility.

The students should learn respect for honest, thoughtful, and conscientious effort—and contempt for shoddy, careless work. They should value brains and accomplishment in others and in themselves. They should recognize that many things are worth doing even if they are not fun at the time. The drill and perseverance required to learn basic skills are prerequisite to doing the really important and interesting things; drudgery lays the basis for "freedom to accomplish."

Although every effort should be made to present material as interestingly as possible, it can be argued that the most important subjects in school are the "dull" ones (such as the multiplication table)—the "interesting" ones can be picked up by independent reading. In spite of this, students should be made to see that a rigorous and challenging intellectual experience is stimulating and rewarding in a very special way; there is deep satisfaction in a hard job well done and in a tough problem licked.

Stiff Courses Are Rewarding

Here the attitude of the teacher is the dominant factor in showing the students that the stiff science courses, with their insistence on reasoning and understanding, are fun—not in the sense of "whoopee," but stimulating, challenging, and rewarding. To have a teacher with the needed enthusiasm and training for each subject, departmental work should be encouraged as early as possible in grade school. A teacher who neither knows nor cares about a particular subject will do more harm than good by trying to teach it.

Every encouragement should be given to intellectual curiosity and investigation by offering facilities for reading, observation, and experimentation in class and at home. In this way students will find that even teachers do not know everything and there is still much to be learned. As they learn to think for themselves they will inevitably deviate from some customary modes of behavior. Hence they should not only tolerate but really appreciate the individual characteristics and nonconformities of others—even harmless idiosyncracies.

In short, the preparation I recommend for a scientific career is a good, thorough, fundamental education in the liberal arts, with more emphasis on mathematics and science and with special attention to reasoning and understanding.

Here's an Idea

Parents, Teachers, Pupils Cooperate in Science Program

The formaldehyde smelled terrible to Raymond and David, but they kept right on cutting. These two sixth-grade boys were dissecting a frog they had purchased from a biological supply house. They had washed dishes to earn the money to buy this special frog. It was to be part of their home project for the science fair in the Dawes School at Evanston.

The boys' project was only one of many displayed at the fair last spring.

The fair at Dawes School resulted from the interest and efforts of the school's science committee, composed of eight or nine parents and teachers. Guided by Dr. William T. Nichol, this committee has met periodically since the fall of 1955.

The committee's first goal was to build a collection of science apparatus, which teachers and children could use in the classrooms. Parents searched their shops and basements to collect and contribute Pyrex glassware, magnets, wiring, electrical switches, chemicals, etc.

Children contributed simple machines, rock collections, and other projects they had made in class or at home. Some classes cut out pictures for a picture file of science phenomena. Combined with the money spent by the school to requisition science supplies, an excellent storehouse of science apparatus was accumulated.

The science fair featured classroom exhibits about birds, constellations, weather, plants, and animals. Many parents helped their children with individual projects. A father helped his son take pictures through a microscope using a box camera and a 100-watt light bulb. A mother helped her daughter collect, mount, and identify fossils which the child had found in a new gravel driveway. Two parents set up a "Dad's Corner" at the fair. One father arranged a display to show the different stages and materials used to make a simple bar of soap. Another father made models and illustrations to show how the transistor radio evolved from the crystal set.

Recently, a classroom teacher volunteered to direct a science club of sixth-graders. Prospective students were screened by personal interview and recommendations of their classroom teachers. The 14 boys and girls who were chosen meet once a week after school to plan and work on science topics of interest to them.

Parents serve as resource persons to the teacher. A housewife and former research chemist will help in planning experiences in chemistry. An electronics man has a friend who will do an excellent job as a visiting speaker about outer space. Other resources are being discovered.

The smell of formaldehyde has vanished from the lobby of the Dawes School, and Raymond and David are now in junior high school. However, the pattern will be repeated, for this *community school* is practicing the idea that parent, teacher, and child want to and can contribute toward building a rich science program.

—Gary R. Smith, instructor, Northwestern University; on leave of absence from Evanston schools.

—And They Said It Couldn't Be Done!

The growth and success of the Horace Mann insurance companies have proven that teachers are good risks and that they have business acumen.

By IRVING F. PEARSON, *IEA Executive Secretary*

SOME 20 years have elapsed since the teacher welfare committee of the Illinois Education Association first explored the possibility of an insurance program as an extended welfare service for IEA members. After much effort the committee secured Blue Cross hospitalization services on a statewide basis. After four years of trial with this project, it was discontinued because the desired statewide services were not achieved.

Commercial insurance firms were asked to submit proposals for a statewide health and accident insurance coverage at reasonable rates. No satisfactory offer was received. "Teachers are poor risks," was a standard reply.

However, the committee felt that on the basis of the previous four-year hospitalization experience, teachers were not poor risks and that there would be ample leeway in cost experiences of a "non-profit" hospitalization plan to warrant the creation of a teacher-owned company for teachers and their families.

Mutual Company Began

Subsequently, with the approval of its Representative Assembly, the IEA created the IEA Mutual Insurance Co.; $50,000 was needed for capitalization. Then a desire was expressed for automobile insurance; $25,000 more was needed for this purpose – plus 500 policy-holders. This was found in a Springfield credit union which provided such insurance. The capital of the credit union and its policies were fused with those of the IEA and of divisions and individuals subscribing to shares: thus the required minimum of $75,000 and 500 auto policyholders were secured.

A member of the committee and a leader in the credit union, Leslie J. Nimmo, a Springfield High School classroom teacher, became the company manager. He received no salary the first year. The directors then—as now—received no salaries. They labored in the faith that the venture would succeed. Succeed it did.

The Iowa State Teachers Association became interested in the insurance program and sought its services. Spreading the risks seemed to be a good thing, and Iowa was admitted. The company became the Horace Mann Mutual Casualty Co.

More States Are Served

Subsequently, new states brought new capitalization to cover their formative years. The Horace Mann Life Insurance Co. was formed, and is similarly controlled and dedicated. Now 17 states are served by the Horace Mann companies at the instance of their own education associations.

The mutual company, now known as the Horace Mann Mutual Insurance Co., through its policyholders, controls the majority of the stock in the life insurance company—an old-line stock company. The rest of the life insurance stock is owned by state associations and many teachers who were willing to venture money in the new service.

Small, inexpensive, rented headquarters were first used for the companies, and then larger rented quarters at Springfield. Finally, at an annual meeting the board of directors courageously decided on the purchase of a large, well-constructed headquarters building at 216-220 East Monroe Street, Springfield. The building, which was to have been a hotel, had never been fully completed. About a quarter of a million dollars was paid for it, and another $250,000 was expended to make it an ideal office building. This building, now debt-free, is valued at more than $1,000,000. And they said teachers were poor risks and had no business acumen!

Competent and responsible experts now advise the securities committee on all matters of investment. The surpluses to the policyholders and shareholders have thus grown. The companies have long enjoyed the highest ratings in the insurance field.

Being controlled and directed as they are, the companies have entered fields of service for teachers and pupils that others would not venture into until later—and then only for a short while because of little or no profit. The motive of the companies has been and always will be one of service to teachers, their families, and their pupils at rates generally geared to actual experience plus adequate surpluses for the protection of all.

New Service Added

Still another new service is being made available. It has long been recognized that the average teacher does not have the time nor ability to consider carefully investments, particularly for long-time, safe returns.

The directors and cooperating states, again with interested individual shareholders, have created the Horace Mann Fund, Inc., approved by federal and state government agencies. Here teachers may invest funds as they wish by purchasing shares at their current market values, determined by the current

value of the investments of the company.

Dividends based upon the earnings and the capital gains on investments, carefully supervised by competent advisers, may be used by shareholders to purchase additional shares or received as dividend returns. This is a "middle-of-the-road" operation designed to secure reasonable capital as well as investment return gains. Shares may be purchased or sold at the instance of the individual at any time or when their current value is at a requested figure. Values will fluctuate as the value of the companies' investments vary; but the fairly conservative investment policy is designed for fair constancy through company investment returns and returns resulting from growth.

The fund was capitalized originally at $106,000—10,600 shares at $10 each. The value of subsequent shares is determined by the current assets in relation to the number of outstanding shares.

Thus, through state association action, the desired teacher-welfare services have expanded.

Financial Picture

The Horace Mann Mutual Insurance Co. is presently capitalized at $400,000. Its earned surplus is $1,000,000. It offers hospitalization, health and accident, medical and major medical, automobile, and pupil insurance of various types.

The Horace Mann Life Insurance Co., offering various types of life insurance, is capitalized at $375,000, has an earned surplus of $39,000, and total insurance of $33,000,000. Policyholders benefit from dividends annually.

The infant, the Horace Mann Fund, Inc., has already established itself as a welcome service to teachers.

There were those who said that such things could not be done by teachers. Teachers have proven otherwise. Horace Mann, "the father of American public education," would have been proud of teachers courageous and competent enough to provide such services for their profession and the pupils they serve.

These twelve persons head the statewide educational groups which are affiliated as sections of the IEA.

Illinois Association of Classroom Teachers. William Lee Hodge, boys' counselor, Thomas Edison Junior High School, Springfield. *Education:* B.S. and M.S., Illinois State Normal University. *Experience:* Palmer School, Springfield—fourth grade, practical arts. *Professional activities:* NEA Department of Classroom Teachers—advisory council member. IACT—vice-president and public relations chairman, 1955-57. IEA South Central Division—vice-president, 1958-59. Springfield Classroom Teachers Association—president, 1954-56. Member—IEA, NEA, IACT, Gamma Theta Upsilon, Kappa Delta Pi. *Other activities:* Sunday school teacher and chaplain, Lutheran Church; director, Springfield Soap Box Derby.

Illinois Association of County Superintendents of Schools. Virgil N. Wheeles, Murphysboro; county superintendent, Jackson County. *Education:* B.S. and M.S., Southern Illinois University. *Experience:* Rural teacher, elementary teacher and principal, high-school teacher and principal. *Professional activities:* IACSS—vice-president, 1957-58; executive committee, three years; chairman, Vienna Block, three years. Member, special committee of county superintendents to report to School Problems Commission. IEA Southern Division—former second vice-president; former member of executive committee. Member—IEA, NEA, IACSS, Kappa Phi Kappa, Illinois Schoolmasters Club. *Other organizations:* Illinois Agricultural Association, A.F. and A.M., I.O.O.F., B.P.O.E., F.O.E., Sphinx Shrine Club, Scottish Rite Bodies, Veterans of Foreign Wars, American Legion.

Illinois Association of Educational Secretaries. Lola E. Rieke, executive secretary of evening divisions, Northwestern University. *Education:* B.A., Northwestern University; further study, Northwestern University and University of Chicago. *Experience:* Secretary, A. J. Nystrom and Co. and Barrington Schools. *Professional activities:* Member—IEA, NEA, IAES, National Association of Educational Secretaries. *Other organizations:* Formerly member of League of Women Voters, Barrington Area Council for the United Nations, Music Club, Junior Women's Club.

Illinois Association of Junior Colleges. Kenneth L. Edwards, dean, Belleville Junior College. *Education:* Ed. B., Illinois State Normal University; A.M., University of Illinois; further study, St. Louis University. *Professional activities:* Member of advisory committees to Illinois Higher Education Commission. Member—IEA, NEA, Association of Higher Education. *Other organizations:* Optimist Club; Belleville Chamber of Commerce, member of area plan committee.

Illinois Association of School Administrators. Lester O. Litle, superintendent of schools, Quincy. *Education:* B.S., Southwest Missouri State College; M.A. and Ed.D., University of Missouri. *Experience:* Teacher of mathematics and science, high-school principal, college teacher and lecturer. *Professional activities:* Member—IEA, NEA, IASA, American Association of School Administrators, Quincy Education Association, Adams County Schoolmasters. *Other organizations:* Kiwanis.

Illinois Association of School Nurses. Florence S. Thompson, school nurse, Rich Township High School, Park Forest. *Education:* University of Washington—bachelor's degree, certificate in public health nursing; further study, University of Chicago. *Experience:* Staff nurse and assistant supervising nurse, county health departments in Washington; St. James Hospital, Chicago Heights; school nurse and village nurse, Park Forest—organized school and community nursing program and was supervising nurse. *Professional activities:* American School Health Association—member, committee on Functions of the School Nurse. Member—IEA, NEA, American Nurses Association, Lakeshore School Nurses, local professional groups.

Illinois Association for Supervision and Curriculum Development. W. Walter Lochbaum, curriculum coordinator, Streator Elementary Schools. *Education:* B.S. and M.S., Illinois State Normal University; further study, University of Illinois, ISNU, Northern Illinois University. *Experience:* Teacher, Morrisonville; US Army orientation classes; principal, Danvers Elementary School and Mt. Auburn Elementary School. *Professional activities:* IASCD—treasurer, 1956-58. Streator Elementary Teachers Association—legis-

Mr. Wheeles

Mr. Hodge

Mr. Bueltmann

The Section Presidents

Mr. Hammer

lative chairman, 1957-59. Member—IEA, NEA, ASCD, American Association of School Administrators, Illinois Elementary School Principals Association, Pi Gamma Mu, Gamma Theta Upsilon. *Civic organizations:* Streator Welfare Council—president, 1956-58; Kiwanis Club—president, 1959; Community Chest—budget committee, 1956-59; Streator YMCA-YWCA; Boy Scouts—neighborhood commissioner, 1951-54.

Illinois Association of Secondary School Principals. Thaddeus J. Lubera, associate superintendent in charge of instruction (north section), Chicago public schools. *Education:* Graduated, Chicago Teachers College; B.A., Lewis Institute; M.A., DePaul University; Ph.D., University of Chicago. *Experience:* Elementary teacher and principal, high-school teacher and principal, assistant principal (high-school), district superintendent, assistant superintendent in charge of high schools, principal of Wells Evening School, high-school evening counselor, part-time instructor at DePaul. *Professional organizations:* Member—IEA, NEA, IASSP, National Association of Secondary School Principals, North Central Association of Colleges and Secondary Schools, Joint Committee of the School-University Articulation Conferences, Large High School Principals Group, Steering Committee of Illinois Curriculum Program.

Mr. Lubera

Illinois Elementary School Principals Association. Kenneth S. Hammer, superintendent of schools, Morris. *Education:* Bachelor's degree, Cornell College; master's, University of Colorado; further study, Oregon State College, University of Illinois. *Experience:* Mathematics teacher, junior and senior high school; critic teacher at Western State College of Colorado; superintendent of schools, Vermont, Ill.; director of veterans' education for public schools of Sault Ste. Marie, Mich.; principal, Morris. *Professional activities:* Northern Illinois Conference on Supervision—president. Illinois Council on Educational Administration—president, 1956-57. Member—IEA, NEA, IESPA, NEA Department of Elementary School Principals, Illinois Association of School Administrators, American Association of School Administrators, Illinois Association for Supervision and Curriculum Development, Association for Supervision and Curriculum Development, Superintendents Roundtable. *Civic organizations:* Lion's Club—past president, American Legion, Eagles, Citizens Committee of the University of Illinois.

—Bak Studio, Palatine

Miss Rieke

Illinois Junior High School Principals Association. Ernest E. Poe, assistant superintendent, Wheaton public schools. *Education:* B.S., Indiana Central College; M.A., State University of Iowa; further study, Northern Illinois University, Northwestern University, Illinois State Normal University. *Experience:* Science teacher and coach, Winslow High School and Wheaton High School; science teacher, coach, and principal, Forreston High School; principal, Wheaton Junior High School. *Professional organizations:* Member—IEA, NEA, IJHSPA, National Association of Secondary School Principals, Illinois Elementary School Principals Association, Association for Supervision and Curriculum Development, Phi Delta Kappa, Illinois State Historical Library, Steering Committee of Illinois Curriculum Program, Illinois Council on Educational Administration. *Civic activities:* YMCA board, Wheaton Safety Council, Methodist Church commission on education.

Mr. Edwards

Illinois Retired Teachers Association. Ross Marshall, Joliet. *Education:* B.S., University of Michigan; further study, University of Michigan, University of Illinois, Colorado A. and M. *Experience:* Teacher of machine shop practice in engineering shops at University of Michigan, head of machine shop at Joliet Township High School and Junior College. *Professional organizations:* Member—IEA, NEA, IRTA, National Retired Teachers Association. *Civic organizations:* Independent Voters of Illinois, American Legion, Child Welfare League.

Student Illinois Education Association. George Bueltmann, New Berlin. *Education:* Senior at Southern Illinois University. *Professional activities:* Student National Education Association—second vice-president. SIU Student Education Association—president. Member—National Council of Teachers of Mathematics. *College activities:* Resident Fellow position (dormitory counselor). Member—Ole Yellers Club, Men's Residence Hall Council.

Mr. Poe

Mr. Marshall

Mr. Lochbaum

Mr. Litle

Mrs. Thompson

Recent interpretations regarding

INCOME TAX DEDUCTIONS

for educational expenses

By WAYNE A. STONEKING

IEA Research Assistant

MANY TEACHERS may save money because of recent clarification by the federal Internal Revenue Service of regulations relative to certain educational expenses. While local internal revenue offices are permitted some discretion in such matters, it is believed that they will act in accordance with the following interpretations. "Teacher" as used here generally means certified school personnel and professional personnel on the college or university level.

Deduction Depends on Primary Purpose

Whether or not a teacher's educational expenses are deductible depends on the primary purpose of the additional education. Generally speaking, such expenses are deductible if the primary purpose is as follows: 1) to meet educational requirements of an employer or applicable law or regulation imposed as a condition to retention of salary, status, or employment; or 2) to improve or maintain skills required in employment. Results incidental to the primary purpose – such as increased salary, change of duties in the same position, advanced degree, etc.–do not destroy the right to deduct educational expenses for income tax purposes.

The only educational expenses that are clearly not deductible are those incurred in first qualifying for a position. For public school teachers this would generally apply to those who have not yet received the bachelor's degree. However, a non-degree teacher may be allowed to deduct educational expenses if he can show that his school board employs non-degree teachers in regular (not substitute or temporary) positions. If the additional education was clearly for the purpose of substantial advancement in position or obtaining a new position, the expense would not be deductible.

Expense of education purely for the purpose of fulfilling the general cultural aspiration or other personal aims of the individual is not deductible.

How Deductions Are Taken

Where deductions for educational expenses are claimed, Form 1040 must be used. Information to aid in determining whether such expenses are deductible should be included. A statement from an authorized official or school officer to the effect that the education is required as a condition to the retention of the teacher's salary, status, or employment should be accepted as proof that the expenses were incurred for that purpose. Where the primary intent is to improve skills, evidence of courses taken in the teaching field should suffice. If names or brief descriptions of courses do not show a clear relationship to the teaching field, it should help to indicate that it is customary for other established teachers in similar positions to take such courses. The usual records supporting income tax reports must be kept.

When a teacher, incurring deductible educational expense, is away from home overnight, he may deduct transportation, meals, and lodging costs from gross income on page 1 of income tax Form 1040, thus reducing the taxable amount. The standard, 10-percent deduction may also be taken if deductions are not itemized on page 2. If page 2 deductions are itemized, cost of tuition and books may be included. If deductions are not itemized on page 2, the cost of tuition and books is not deductible.

When the teacher travels daily between one city and another to and from college or university classes, his transportation cost is deductible from gross income on page 1 of Form 1040; but meal expense is not deductible. The standard, 10-percent deduction may also be taken. If page 2 deductions are itemized, the cost of tuition and books may be included. If the college or university classes are located in the same city as employment and the teacher goes directly from place of employment to class, the expense of transportation between the place of employment and classes is deductible on page 1. Transportation cost from the place of residence to and from classes in the same city is not deductible.

Provided other tests are met, expenses incurred in attending a workshop sponsored by a professional educational association, such as the IEA or the NEA, would be deductible for income tax purposes. Professional dues are also deductible on page 2 of Form 1040. Stipends granted to high-school and college science teachers, including fees and allowances for incidental expenses, for attendance at a summer institute for science sponsored by the National Science Foundation are excludable from gross income (page 1 of Form 1040), either wholly or in part depending on whether or not the grantee is a candidate for a degree.

Retroactive Claims

If a teacher wishes to file a claim for refund for educational expenses incurred during a prior tax year,

Form 843 must be used. The completion of a separate Form 843 is required for each year for which a refund is claimed. Information justifying the deduction of educational expense should accompany each claim for refund. Refunds may be claimed for each of three prior years; for example, refunds for expenses incurred in 1955 may be claimed before April 15, 1959; refunds for 1956 before April 15, 1960; and refunds for 1957 before April 15, 1961—or all may be claimed before April 15, 1959.

If a teacher has already claimed a refund for a prior year and wishes to change the claim because of recent intrepretations, he should file an *amended* Form 843 for each of the years involved.

Questions and Answers

At the Cleveland convention of the NEA in July, 1958, NEA Pres. Ruth Stout put the following questions to Virginia S. Wraase of the division of tax rulings, US Treasury Department, who supplied the answers.

Q. I live and regularly teach in Geneva. During the summer I attend the nearest university which is in Chicago, 35 miles away. The course is a six-weeks course and I stay in Chicago during the six-weeks period. Am I entitled to deduct my traveling expenses, including the cost of my meals and lodging?

A. Under these circumstances—assuming the education is of the type for which expenses are deductible—you will be entitled to deduct as traveling expenses the cost of your transportation to the university and return as well as the cost of your meals and lodging while there.

Q. Suppose the facts in my case are the same as in the question just discussed, except that I drive daily from Geneva to the university and return. The regulations say that commuters' fares are not deductible. Does this mean that I can not include in my deductible expenses the cost of daily transportation between Geneva and the location of the university?

A. No. While commuters' fares are not deductible, this does not apply to the costs of transportation between the area of your regular business location and a university located in a distant city, provided, of course, the education meets the necessary requirements. No deduction is allowable, however, for your meals since you are not traveling away from home overnight.

Q. I take courses at night school for the primary purpose of improving skills required in my employment. Three evenings each week I go immediately to night school classes from the school where I teach during the day. Are these transportation expenses deductible?

A. Yes. Under these circumstances you are entitled to deduct expenses incurred for transportation between the school where you teach and the school where you attend classes, regardless of whether they are located in the same or different cities.

Q. If I take summer school courses for the primary purpose of improving my skills and thus incur expenses for transportation between my residence and the university which is located in the city where I teach and live, are my daily transportation expenses deductible?

A. No. This is a situation where the transportation expenses fall into the category of commuters' fares and are not deductible.

Q. In those cases where the transportation and traveling expenses qualify for deduction, are they deductible in computing adjusted gross income on page 1 of my return or must I itemize my deductions on page 2 in order to claim them?

A. Those traveling expenses, including meals and lodging, and transportation expenses which qualify for deduction are deductible in computing adjusted gross income on page 1 and do not effect your right to claim the standard deduction. This is also true with respect to deductible expenses for tuition and books to the extent your employer reimburses you for those items. I understand, however, that this is not the usual situation.

Q. How do I treat deductible expenses for tuition and books if my employer does *not* reimburse me for these items?

A. Deductible expenses for tuition and books for which you are not reimbursed by your employer are deductible only on page 2 of your return and only provided you itemize your deductions there instead of claiming the standard deduction.

Q. Are educational expenses incurred in attending a university during sabbatical leave deductible on the same basis as they are in attending a summer school session?

A. Yes. Expenses for education giving rise to deductions are deductible whether incurred on sabbatical leave or otherwise.

Q. Are expenses incurred in attending a workshop sponsored by an educational association, such as the NEA or one of its departments or a state educational association, deductible as educational expenses?

A. I think I am safe in saying that a workshop of the type referred to would constitute an educational activity and that expenses incurred in connection therewith are deductible provided other tests are met. Transportation expenses, for example, constituting commuters' fares would not be deductible.

Q. The regulations say that expenses for education undertaken primarily for the purpose of substantial advancement, etc., are not deductible. How can a teacher *prove* that his primary intent was to maintain or improve his skills rather than to advance his status?

A. In specific cases, there may be other methods of proving that a teacher's primary intent is to maintain or improve his skills. The regulations themselves suggest a method, however, when they say that if it is customary for other established members of the taxpayer's trade or business to undertake such education, the taxpayer will ordinarily be considered to have undertaken the education for the purpose of maintaining or improving skills required in his employment, unless, of course, the education is required of the taxpayer in order to meet the minimum requirements for qualification or establishment in his intended trade or business or specialty therein.

I am sorry if that answer seems a

little complicated but it is because I must refer to all the provisions that must be taken into consideration.

Q. I am a second-grade teacher. Because many of my pupils have had difficulty in learning to read, I decided to take courses this summer in methods of teaching reading to slow learners. When I told my superintendent about my plans, he said he would like to assign me next year to a remedial reading class for the entire elementary school. Since my purpose was to improve my skills in my present position, will I lose the right to deduct my expenses just because my assingment may be changed next year as a result of taking this course?

A. Since your primary purpose was to improve skills required in your employment, the resultant change in assignment will not cause the expenses to be nondeductible.

Q. I have taught physical education in grades seven and eight for many years. Next year I will be assigned to physical education classes in grades eight through 12. During the summer I intend to take courses in physical education for secondary school pupils. I will not obtain a new certificate nor a salary increase as a result of this education. My certificate as a physical education teacher entitles me to teach all grades. May I deduct my summer school expenses or does my change in assignment mean a new position that would disqualify the expenses for deduction?

A. Although no intention is stated, I believe these facts indicate an intention to improve skills required in your employment and, accordingly, the expenses are deductible.

Q. I am required by my employer to take courses giving six hours of academic credit every two years in order to retain my position as a teacher. The nature of the courses is not specified by my employer. I have no plans for leaving my present empioyment as a teacher. Am I required to establish a relationship between the courses taken and the subject or subjects I am presently teaching?

A. The answer to this question is "No." It is not necessary to establish a relationship between the courses taken and the subject or subjects you are teaching.

Q. The facts are the same as in the question just discussed except that I take courses giving more than the required six hours of academic credit. What am I required to show in order to be entitled to a deduction for the expenses?

A. You must show a relationship between your teaching assignment and the courses of education selected only to the extent of the excess of the courses taken over the courses required in order to retain your position.

Q. I am fully qualified as a teacher of mathematics in a junior high school. I am advised by my superior that I will be required to teach science beginning with the next school year. In order to become qualified to teach science I must take additional courses during the summer months. Am I precluded from deducting the expenses because the courses relate to a new subject?

A. No. Under these circumstances, the education meets the test of maintaining or improving skills as well as the test of retaining employment and you are entitled to the resultant deductions.

Q. A mathematician employed by an industrial concern takes courses in education in order to qualify as a teacher of mathematics in high school. Is he entitled to deduct the cost of these courses?

A. No. The expenses of these courses are not deductible because the education was undertaken in order to meet the minimum requirements for qualification as a teacher.

Q. I am required by my employer to obtain six semester hours of college credit every five years in order to retain my employment. I take courses providing these six semester hours of credit, but I take them before the end of the five years. Am I still entitled to deduct the expenses incurred?

A. Yes. The fact that you take the required courses before the end of the five-year period does not prohibit the deduction.

By WILLIAM C. KVARACEUS

IN RECENT YEARS five major research studies have attempted to uncover how delinquent children differ from their non-delinquent friends or peers. These studies were made in such far distant places as Boston; Los Angeles; Detroit; and Passaic, N.J. Yet they report much the same story.

The delinquent child is more like than different from his law-abiding counterpart; he does not represent some special breed of youngster from a strange planet in space; he is more likely to be just any boy living on any street in any town.

These Are Differences

When differences in personal makeup, home and family background, and school adjustments are noted, they generally show the delinquent as different from the non-delinquent as follows:

1. *Home discipline.* Discipline in his home is erratic and runs to either extreme; the delinquent is frequently and severely punished or he is over-indulged and spoiled.

2. *Emotional conflict in home.* The delinquent's family life consists of one battle after another in which parents and children find themselves in opposing camps. Emotional warfare splinters the family with distrust, fear, and even hate.

3. *Lack of success in out-of-school ventures.* The delinquent is not "very good at anything" as he attempts to compete or hold his own with his play or work group. His delinquent

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Dr. Kvaraceus is on leave from Boston University to direct the special project initiated last fall by the National Education Association to help schools deal with problems of juvenile delinquency. A 25-cent booklet by Dr. Kvaraceus, *Juvenile Delinquency*, was published in October, 1958, by the NEA Department of Classroom Teachers and the American Educational Research Association as No. 15 in the series, "What Research Says to the Teacher."

These check points will help you determine whether or not you have a pupil in your class who is

Vulnerable to Delinquency

—Photo from IEA-NEA film, "Mike Makes His Mark."

acts usually represent an effort at being good at something—even if it is only in stealing, window breaking, or truanting.

4. *Dislike for school.* This is no Pinocchio preference for Pleasure Island. This is a white-heat hate for school and for persons connected with it.

5. *Disinterest in school work.* The delinquent child is the teacher's worst motivational problem. Try as hard as she will, the classroom teacher seldom succeeds in raising even a spark of interest in school activities.

6. *School failure.* His report card shows him to be in a state of perpetual bankruptcy. His lack of interest and his intent to leave school early frequently can be traced to his singular lack of success in the academic program of the school. As might be expected, he frequently is held back and is over-age for his grade.

No Plans for Future

7. *Early school leaving.* The delinquent intends to leave school as soon as the law will allow. Usually he has no educational or vocational plans for the future.

8. *Truancy.* In view of the negative school picture the delinquent tries to solve his school problems by running away. Frequently the truancy represents an emotional recess period from the jibes and insults of the classroom.

9. *Lack of participation in extra-curricular activities.* The delinquent seldom takes part in the organized and supervised youth activities that are available in school or community. He is not the type to submit to rules and regulations.

10. *Aggressive attack.* In coming to grips with his problems of daily living the delinquent always reacts in an overly aggressive manner. He is always taking it out on property and persons. He acts out his problems and expresses his feelings in an overt aggressive manner.

Since these 10 "signs" represent the most distinguishing characteristics which mark the delinquent apart from the law-abiding youngsters, the researcher warns us: "If a pupil in your classes shows a saturation of these signs, watch out! He may now be predisposed, susceptible, or exposed to the development of delinquent modes of adjustment."

Children showing a number of these tell-tale signals deserve a second look and a helping hand. Early detection with some follow-up and treatment can spell the difference between delinquency and decency.

How good a job are we presently doing in lending a helping hand to these children? With the delinquent offender our record is not too good. These children are hidden in the regular classrooms. They are frequently themselves very confused and more often than not are confusing the teachers.

The deviate or very different child has an extremely difficult time in our culture of cosmetics and conformity. The child who is different, difficult, or unattractive all too frequently is misunderstood, misjudged, and very often rejected in the community. This is particularly true of the delinquent who, thereby, presents some special problems.

The delinquent is a rebellious child, full of hate and hostility. But he is often met with equal hate and hostility on the part of the adult community. This emotional involvement makes an objective and therapeutic climate difficult to attain. Typically, the press and lay opinions —in the guise of a common-sense approach, as seen in the curfew, woodshed, throw-the-rowdies-out-of-school appeals—represent not so much an attack on the delinquency problem as an out-and-out attack against the juvenile delinquent himself.

Similarly, teachers report in a west coast study that, given the choice, they would least prefer to work with overt-aggressive offenders, as against all other types of deviate children. In other words, the delinquent tends to be "low man on the totem pole" of acceptability in the classroom. This is well illustrated by the mass expulsion of delinquents in at least one large city in the United States.

What Is Delinquency?

Of all exceptional children, the delinquent—more than others—defies precise definition. It is difficult on the continuum of behavior - misbehavior-delinquency to draw a line between mischief and delinquency. The difference may only reflect a difference in the irritability level

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Schoolhouse Symphony

Music can be a stepping stone to good citizenship and self-discipline, as elementary pupils learn concentration and perseverance through musical activities.

—Photos courtesy of American Music Conference

BACK TO SCHOOL each fall means back to music for millions of American children who are taking adventurous steps into a new world of harmony, rhythm, and song.

From kindergarten to high school, youngsters of today are learning the language of melody and sound. Eager fingers of four- and five-year-olds grasp rhythm sticks, bells, triangles, cymbals, and tambourines to make tiny-tot harmony. For older grade-school children, back to school may have meant learning a new instrument or earning a proud chair in the school orchestra.

A Grand Phenomenon

All over America ukuleles, trumpets, and trombones, autoharps, flutes, violins, clarinets, pianos, and a host of other instruments are tuning up in a giant symphony of school children. And this phenomenon of the '50s promises to have great continuing impact on the nation's music through the years to come.

The American Music Conference, a non-profit organization devoted to increasing participation in amateur music at all age levels, reports approximately 8,000,000 grade-school-age children in America now play instruments and receive musical instruction in school. The group says this is a conservative estimate, and also reports that approximately 90 percent of the nation's grade schools now provide rhythm band and melody instrument training from kindergarten on through the primary grades.

In schools throughout the United States, the trend toward making children at home with musical instruments right in the classroom shows up in sharp focus.

Fourth-graders in Alliance, Ohio, public schools discover the fun of music through ukulele classes, begun as preparation for learning more difficult stringed instruments.

In Northampton, Mass., sixth-graders learn to make simple instruments from scrap material, then play them in class.

Grade-school youngsters in Louisville, Ky., one of the leading cities in school musical education, are playing two and sometimes three instruments by the time they reach fourth grade.

Pensacola, Fla., school children learn the relationship of music to arithmetic and wind up doing better in both subjects.

Why this great upsurge in musical instruction in grade school?

Representative comments from educators around the nation indicate that music is not taught solely for music alone, but as a stepping stone to good citizenship, better character traits, and improved physical capabilities. Particularly in the primary grades, teachers find development of natural musical traits in children seems to increase their grasp of other subjects.

Ronald E. Gerard, instrumental instructor for Claremore, Okla., grade schools, says, "Band students generally are among the most orderly and studious of all our pupils. We are not trying to make outstanding musicians out of all of these boys and girls. Rather we are trying to teach them good citizenship, and they are learning what discipline means."

"Music shapes life and personality more than any other art," says Thaddeus J. Lubera, assistant superintendent of Chicago's secondary schools. "It also teaches punctuality, teamwork, discipline, and cooperation."

Music Sharpens Perception

Ernest Opp, Alton, Ill., music director, is convinced, "Music makes the student more perceptive by sharpening his senses of sight, hearing, and touch. Playing in groups, students learn to observe quickly and respond correctly to directive signals."

Educators say the key to the upsurge of music in the grade school may be in treating it as an enjoyable

group activity. They report that the most successful music programs are those that avoid the outmoded idea that children must have special "talent" to play instruments.

Another common denominator of today's good school music programs is the elimination of the special "music room" and "music teacher" where children come into contact with music only once or twice a week with an instructor who's "different" from their own home-room teacher.

Step into neat, quiet Lincolnwood School at Evanston, Ill., and you'll see home-room teachers leading the class in three-part harmony, helping youngsters compose words and music for next week's music festival, and discussing a song flute interpretation of a simple tune with the earnestness of a New York Philharmonic Symphony Orchestra rehearsal.

Typical of many schools around the nation that use music-making to stimulate learning, Lincolnwood teachers start handing out simple rhythm instruments to children almost as soon as they come through the kindergarten door.

Their Control Is Amazing

Says Mrs. Virginia Stoll, as she watches one of her four-year-old charges proudly lead his classmates who have bells, cymbals, and tambourines, "It's amazing to see the precision and control the children learn from playing music together. At the beginning of the year, they did not know how to sit still and wait for the command to play. Now they have developed self-control and hold their instruments quiet until the leader gives them the signal."

Mrs. Stoll believes music is indispensable to the learning process. "Musical activities definitely teach the children what it means to cooperate with one another and what discipline is about in an enjoyable manner," she says. "We use music to signal the beginning of activities and also to calm things down. The children love it and respond enthusiastically."

At Lincolnwood, the music activity begun in kindergarten carries through to the sixth grade. First-graders acquire more skill with the rhythm instruments to combine music with physical activity and learning. The classroom piano makes its appearance in second grade along with introduction to fundamentals of musical terms and structure.

Familiarity with wind instruments begins in third grade with use of song flutes. Children play in groups, create their own tunes, and learn to transpose from one key to another.

Fourth-Graders Branch Out

By the time they reach fourth grade, youngsters are branching out into more advanced wind and stringed instruments such as violin, French horn, and clarinet. Almost half of one class were members of the beginners' orchestra, while one third more were planning to join the following year. None of the children had played a band instrument at the beginning of the year.

Band members receive a half-hour group lesson in their particular instruments each week from the instrumental music director, Miss Marie Goyette. Band rehearsals also take place each week. Both lessons and rehearsals are given during regular school hours, and the instruments are rented.

Besides their regular music periods where they become acquainted with three-part singing, performance on the autoharp, and more advanced fundamentals of music, many fifth- and sixth-graders participate in the advanced orchestra.

The children present programs for parents, provide full orchestra accompaniment for their own school puppet shows, and take part in an annual all-school music festival at Evanston Township High School.

Is music a frill to Lincolnwood teachers? Is playing another boring routine to pupils? They say this:

Mrs. Martha Maschmeyer, second-grade teacher: "From our music sessions, my children are learning precision; concentration; coordination; and, most important of all, doing things successfully together."

A curly-haired moppet of nine: "I never played a song flute before—and is it fun! Now I'm learning the clarinet, too, so I can be in the orchestra next year."

Music Develops Responsibility

Mrs. Irene Smith, fourth grade: "Making music seems to develop in the children a sense of responsibility that carries over into their other lessons."

Mrs. Bernice Amyx, principal of Lincolnwood: "From every educational standpoint, our music program is one of the most valuable forms of citizenship training we provide the children. Playing music makes for better citizens among our students. We never have disciplinary problems with any of our children who have interested themselves in music."

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TINY-TOT HARMONY begins in kindergarten at Lincolnwood School in Evanston, which is among the 90 percent of US elementary schools making music an important part of youngsters' everyday lives.

The success of the Future Teachers Organization at Haugan School in Chicago indicates that recruitment can begin in the elementary grades.

They're Not Too Young

ELEMENTARY STUDENTS at Haugan School in Chicago are learning about the teaching profession through the work of a future teachers organization of their own.

The first week of each new semester the 8B and 8A pupils who wish to be considered as future teachers assemble and elect their own chairman, assistant, and secretary. At the first meeting they are told their duties and what is expected of them in appearance, manners, and school achievement.

Each Is Assigned a Room

Each future teacher is assigned to a room—kindergarten through 4A. The future teacher goes to the room to which she has been assigned, introduces herself to the teacher, and offers to give whatever help she can. She takes over the classroom temporarily in emergencies—whenever the teacher may have to leave the room, is ill, or is absent. The eighth-grade future teachers serve as guides to visitors and as tutors.

The chairman of the 8A future teachers reports to the office each morning to ask if any teacher is absent. If a teacher is absent the chairman assigns a future teacher to take over the room until a substitute teacher arrives.

Early in the semester each teacher of grades 2A to 7A is asked to submit a list of pupils who wish to join the Future Teachers Organization. These pupils come to the assembly hall during recess periods. They are seated according to their grades. At the first meeting the principal talks with them about good grooming, perfect attendance, courtesy and good manners at all times, school achievement, and proper attitude.

The officers of the eighth-grade group take over this group and direct the meetings, which are held about two or three times a month. At the meetings special talents and out-of-school activities are discussed; a talented future teacher may sing or play the piano.

Teachers are asked to assign special duties to the future teacher in the classroom. Some tutor slower pupils in reading, spelling, and arithmetic. Some are given bulletin board duties or special classroom jobs. The principal asks the teachers to dignify the role of the future teacher as much as possible.

A collection is made in the office, with the help of the future teachers, of materials about the teaching profession. A scrapbook is kept, and the material is often read at the open meetings.

The future teachers are introduced at assemblies, to visitors, and to the PTA; attention is called to them whenever possible. This, we believe, encourages the pupils to be really serious about becoming future teachers.

Once a year the future teachers are asked to write compositions about why they want to go into the teaching profession. There have been some very fine results.

On the Tuesday before graduation each semester, the principal gives a "faculty breakfast" for the "junior faculty" at recess. The guests are the 8A future teachers who are graduating. Experienced teachers tell why they became teachers, and urge these youngsters to join FTA clubs in the high schools and to keep alive their ambition to become teachers.

Each semester a group of 7A or 8B pupils become playleaders, taking over the morning recess for organized play with pupils in kindergarten through 3A. The physical education instructor teaches these pupils about 45 games for outdoor and indoor recess (for inclement weather when pupils can not go out). These upper-grade pupils in turn teach the games to the younger children.

At the end of the semester a notebook is presented by these playleaders to the principal at the Award Assembly. Each playleader has been asked to write his reactions to his experiences as playleader. Some observations are very good. Many playleaders say that their experiences with these small children make them want to be teachers.

The school librarian trains pupils in all upper-grade rooms as librarians. They help process, shelve, and distribute books. The eighth-grade librarians occasionally go from room to room to tell stories to the lower grades. The head librarian reports on books to the student council. From this group of student librarians come pupils who say they would like to become teacher-librarians because of their experiences.

The sponsors of the Future Teachers Organization are Mrs. Sadie Kalmon, principal, and Miss Norma Larson, assistant principal.

'A Practical Program'

Frank Oneal, director of teacher recruitment for the Office of the Superintendent of Public Instruction, has said, "The two most potent factors influencing children and youth for teaching are satisfactory and stimulating school experiences and encouragement from adults, especially teachers, who are loved and admired by the children." Mr. Oneal has visited Haugan School and watched the future teachers at work. He says it is "a practical, down-to-earth program showing what can be done and how to do it. I know the program has merit and will work." —MRS. SADIE KALMON, principal, Haugan School.

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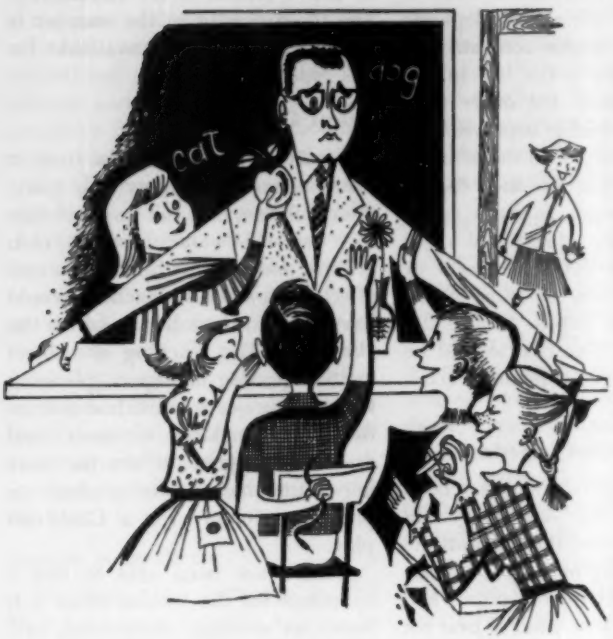


An administrator, a member of the faculty of a teacher-training institution, and a classroom teacher discuss

The Growing Load on Classroom Teaching

Playground and hall duty, teaching of manners and safety, national tests, and community contests all take time from the teacher's real function.

By J. B. JOHNSON
Superintendent
Alton Community Unit Schools

THE CLASSROOM TEACHER has full-time employment for 12 months. Teaching is not a six- or seven-hour day for five days per week for nine months per year. Teaching is a professional service and should not be measured in terms of hours, days, or months.

I am sure, due to personal experience, that teachers of 20 or 30 years ago thought teaching was a full-time job. I am also sure that if they were doing good classroom work, their assumptions were true. I remember teaching a one-room rural school in 1927. I met 26 classes each day, did the janitor work, and served the community in many other ways. The duties, 30 years ago, were very light compared with the work assigned to the teacher in 1958.

The picture has changed a great deal during the past few decades. Many new and important facets have appeared on the educational scene. Teachers, today, should have a thorough knowledge of all new teaching aids, tests, and counseling services. These are not only time-consuming, but they require additional training and experience. Classroom teachers have accepted more and more responsibility for the training of youth —in morals, manners, attitudes, neatness, safety habits, conduct on the streets and in public.

Our schools have been compared to those of Russia. The fact that Russia put a sphere in orbit before we did indicated to those who wanted to criticize the schools that we, as teachers, had failed to teach mathematics and science. The fact still remains that our country supplies the superior mathematics and science students, engineers, and highly trained technicians for the world. This has been true for the past half century and will probably be true in the future. Our high-school graduates have won two major world wars because they had the "know how" and were able to reason and make decisions. These characteris-

tics can be developed in a democracy and not in a system such as Russia has today or has had in the past.

Let us examine the duties of the classroom teacher. First, she must know her subject or teaching level. She does not have time to keep two pages ahead of the brightest pupil in the class. The teacher must be able to plan for the fast, the average, and the slow learners. This requires testing; grading papers; individual instruction; supervised study; thorough assignments; careful evaluation of each pupil's ability; and insight into the social, economic, and cultural levels of the community and the home.

In addition to professional duties, the principal may assign the teacher what is called in some schools *extra* duties. This may include recess and noon playground and hall duty; ticket sales; collection of book rentals; collection of ticket money; and general police duty at a school function such as a football game, band concert, play, or a school program.

School or Proving Ground?

We have allowed the school to develop into a proving ground for many groups; for instance, the teacher may be asked to administer a battery of tests for the purpose of establishing a national norm. The various organizations in the community have often been led to believe that the fate of the nation depends on an essay or poster contest. The classroom teacher is the last in the chain of command; the order goes from superintendent to supervisor, to director, to principal, to department head, to the teacher—and she is "stuck" with the job. In many cases, there is very little educational value in the entire project. The poster or essay contest takes the time of the teacher and the pupils. It also detracts from the time that should be spent on the regular, planned classroom work.

Subject Matter Most Important

In general, some schools have been so interested in the "side show" that they have neglected the main attraction—the teaching of subject matter. The school exists for the pupils and it is my theory that what is best for the pupil is best for the school. Of course, all of the out-of-class activities have some purpose in the total educational program, but the main purpose of education is to give thorough and efficient training in the academic and vocational subjects. Each and every time we assign a duty or activity to the classroom teacher, we are taking her away from the real purpose of her profession.

The average teacher should attend summer school, read, travel, and be an active citizen in the community. The three months in the summer is the only time that is available for this type of work.

Parents Can Help

If parents would take the time to teach manners and safety, help guide their children, take full responsibility for the PTA and mothers club groups, and help with all other out-of-school activities, teachers would have time to do a better job in the classroom. The teaching of subject matter, grading of papers, planning for group projects, individual instruction, and making of clear and complete assignments are far more important than poster contests or preparing Johnny for a Christmas play.

I have not been able to find a substitute for the teacher when it is necessary to assign playground, hall, or cafeteria duties; but I am sure that there is a better way of doing this type of work. Teachers should offer suggestions in regard to this problem.

Teachers need time to rest, prepare extra work, and do research. There are no "coffee breaks" for the classroom teacher. I have taught in the classroom and it is the most time-consuming and exhausting work that I have ever attempted. Let's give the teacher time to teach.

Increasing expectations of patrons, development of special educational programs, attention to individual differences, and finance problems are factors.

By HANS C. OLSEN

Professor of Education
Eastern Illinois University

HEAVY work loads that make it unreasonably difficult or impossible for teachers to serve children and youth in ways and to the extent they believe are important, or that deny teachers the satisfaction of personal needs, jeopardize the quality and effectiveness of any school program.

In schools the country over, many and varied factors work against ideal or even desirable teaching loads. This is not because of any conspiracy on the part of sinister forces, but because of the complexity of our society and the stage of development in which our schools are. School administrations are aware of the need for reasonable teaching loads, and they have worked to reduce these loads.

Because of differences among school districts in educational needs and in financial and other resources, teaching loads can not be the same in different districts. Since enrollments, facilities, and needs among schools within a district vary greatly, teaching loads within a district can not be uniform. Nor can teaching loads within any single school be the same.

Such practical considerations that can not be immediately changed, in large measure, dictate what teachers' loads will be. This is not to say that nothing can be done to make teaching loads more desirable and equitable.

Major factors in the determination of teaching loads are the generally accepted functions of the schools and the increasing expectations of patrons as to what the schools should do for children and youth.

Under the constitution and laws of the state, each school district must, with only minor exceptions, provide educational opportunities for all children and youth within its boundaries who fall within a specified age range. The School Code further requires that every person between the ages of 7 and 16, unless legally exempt, must be in attendance every day school is in session. The statutes also require the district to operate its schools a minimum number of days each year. To carry out these legal requirements, school districts have found it necessary to provide one or more auxiliary services such as transportation of pupils, library services, hot lunch programs, and the like.

Increase in Enrollment

Unprecedented increases in the birth rate have resulted in rises in enrollments that tax school facilities and resources as never before. In addition, there is a trend toward pupils' staying in school longer and longer.

As enrollments have grown, teachers and patrons have become more aware of the tremendous differences in ability, achievement, interest, and needs of pupils in each age level. This, in turn, has called for the development of programs that better serve the different types of pupils. Special needs of our society have forced such programs as health and physical education, driver education, and others into the school program.

As the public has come to recognize the value of music, art, guidance and counseling services, speech correction, and other special programs, these also have been added to the school program. In addition to these are the extracurricular activities, all of which must be sponsored and supervised by the school staff.

Finance Is Important

Since the extent to which any community can satisfy its educational needs depends upon its financial and other resources, these are important factors in the determination of teaching loads. Most school districts are in real need of additional revenues. This problem is especially serious in Illinois because of an antiquated tax system which can be corrected only by a constitutional amendment. In most districts some or all of the school buildings are antiquated and/or inadequate. In many districts, teaching equipment and learning materials are limited.

Available staff, effectiveness of individual teachers, and maintaining an equitable balance play important roles in determining teaching loads.

In setting up teaching loads, the types and number of pupils to be served, the subjects and activities to be scheduled, and the adequacy of available teaching space and learning materials must be given due recognition. Our increasing knowledge of how human growth, development, and learning takes place and our ever-better understanding of pupils needs require that teachers' loads be such that they can effectively deal with pupils as individuals.

Although teaching loads can not be made equal, they should as nearly as possible be assigned equitably among teachers so that each carries his fair share of the total school load. Inexperienced teachers should certainly be favored in the assignment of teaching positions and teaching loads. Routine clerical work of teachers should be reduced as much as possible.

The members of no other profession limit the length of their work day or work week. They do not have or advocate long summer vacations. When their services are needed, policemen and firemen frequently work long days and weeks. Business and industrial executives, salesmen, and self-employed persons generally have no fixed work loads or schedules. Hours of FBI special agents are long, and at a moment's notice, they must be ready to go anywhere they are ordered.

Need Mutual Understanding

None of the foregoing is argument for over-loading teachers. But lay people need to understand the nature of a teacher's work and the conditions necessary for teachers to serve effectively and well, and teachers need to understand the real problems school districts face in determining teaching loads.

Such mutual understanding is the basis for determining and maintaining teaching loads that are satisfying to teachers, good for pupils, and fair to the community.

Clerical work, conferences, help with community projects, and a broader curriculum combine to tax a teacher's time and energy.

By GLADYS ROBINSON

First-Grade Teacher
Fairview School, Rockford

TEACHER LOAD has been the concern of educators for many years. As early as 1863, the National Education Association resolved that working conditions must be improved by limiting the teacher's labors to meet the requirements of health and class improvement. In 1932, the NEA passed a resolution condemning large classes which injured the child's education because sufficient time could not be given to individual instruction.

In the early 1940s, boards of education, under the guidance of superintendents, began adopting local limits on class size. State education associations supported definite stated requirements. Within the past few years the NEA Representative Assembly has recommended that class size not exceed 30 students. The NEA Department of Classroom Teachers recommended that the teacher-pupil ratio be one to 25, and a class size of not more than 30 students.

In 1955, the NEA Department of Elementary School Principals condemned the drop in the quality of

instruction that had been the result of excessive teacher load, and urged that efforts be made to limit classes to not more than 25 students. The NEA Commission on Teacher Education and Professional Standards issued a policy statement in 1955 with emphasis upon classes of 25.

NCACSS Recommends 25 to 1

George B. Martin, head of the education department and director of graduate study at Willamette University, reported in an article, "Adjusting the Teaching Load" (*Educational Administration and Supervision*, November, 1951), that "the North Central Association of Colleges and Secondary Schools recommended, in 1935, a pupil-teacher ratio of 25 pupils to one teacher, and that a violation of this standard was deemed to exist when the pupil-teacher ratio exceeded 30 to one."

What constitutes a teacher's load? Why has this load increased in spite of the emphasis upon reduced class size?

Mr. Martin suggests that there should be a clear distinction between the teaching load and the service load. The teaching load consists of all the necessary work which directly affects teaching: class work, preparation for classes, examinations, tests, reports, recitations, faculty meetings, and such routine work as attending or conducting assemblies; committee work; departmental meetings; student papers; note books; lesson plans; parent conferences; clerical work connected with physical check-ups by dentists, nurses and speech correctionists, and audiometer and visual-aid assistants; conferences with counselors and helping teachers; curriculum meetings; etc.

The service load consists of the teaching load *plus* all of the extra-curricular, extra-community, and extra-administrative activities in which teachers participate: the handling of charity drives, ticket sales, collecting lunch money, attending PTA and school functions, etc.

While many of the activities indirectly associated with a teacher's load are of great value to the work of the teacher, educators agree that they are time-consuming and could be handled much more efficiently and economically by other methods.

Robert E. Jewett, associate professor of education, in his article, "Why the Able Public-School Teacher is Dissatisfied" (*Education Research Buletin*, Ohio State University), attempts to answer the question of why some teachers with a passionate desire to promote learning, and to stimulate the intellectual development of the young, leave the classroom. Among several reasons which he lists, clerical work seems to be the chief obstacle. He mentions as many as 29 clerical jobs; many reports must be made out in either duplicate or triplicate form. Teachers must collect funds for numerous projects, record such, and often keep the money for each. Most of such work is for the community. Mr. Jewett states, "The school office functions, all too often, as an agency to farm out clerical work to the teachers and then becomes a repository for the finished product."

Curriculum Has Expanded

Among other factors causing the continuing increase in teaching load is the curriculum. In the early part of this century emphasis was on the teaching of the three R's and memorization of facts. Subject-matter courses were limited. Now an adequate curriculum must contain a variety of courses to meet state requirements. Preparation for college must be kept in mind; provision also must be made for those who do not plan to enter college. The curriculum must meet requirements and be as broad, yet as inclusive, as possible, to provide best a well-rounded education for all the children of a community.

Is School Plant Adequate?

The school plant must be considered: Are there sufficient classrooms and adequate equipment to provide for the welfare of the children and the convenience of the teacher?

A very important and highly controversial factor is the relative difficulty in teaching each subject. Some subjects are more difficult to teach than others; some require more preparation as well as more follow-up work. It has been suggested that adjustments to teaching loads be based upon such differences.

Some educators advocate adjusting a new teacher's load so that she will have a minimum class size. However, they suggest that in so doing, the more experienced teacher should not be over-burdened.

There is a difference in difficulty dependent upon the grade level. Until recent years not much thought was given to the class size of a primary teacher. Leading educators now agree that there should be very small classes in the primary grades, to provide for as much individual instruction as necessary.

Other Factors

Probably many other factors—heavy enrollments, increased birth rate, working parents, the influence of TV programs, and the insecurity brought about by world affairs—indirectly affect teaching load.

Someone has said that in working there is a level of greatest efficiency, beyond which the fatigue caused by strain of expended energy increases. Since the teacher's main function is to deal directly with children, there should be sufficient time and energy for this most important work. The teacher needs time to make this a creative job, rather than a breathless, continuous expenditure of energy from the first bell to the last.

Marion Cranmore, principal of Burns Park School, Ann Arbor, Mich., in her article, "Free Time for Teachers" (*NEA Journal*, February, 1954), states, "Elementary teachers are enthusiastic about today's rich and challenging curriculum. They are stimulated by the existing potentialities of the resources at their command. But they are only human.

"By the end of the school day, they are so worn out that their enthusiasm has diminished to a marked degree.... Faced with the immediacy of checking papers in the evening, doing the inevitable clerical work, and preparing materials for tomorrow's use, the zest for searching out new ideas and less routine ways of teaching may be almost non-existent."

DR. HARVEY WHITE, teacher for the nationwide TV course, demonstrates "Accelerated Motion."

continental classroom

—a physics course on TV for teachers, students, and many interested "spectators" throughout the nation.

By PHILIP LEWIS

Member, AACTE Subcommittee on Television in Teacher Education
Director, Bureau of Instructional Materials, Chicago Board of Education

APPROXIMATELY 200 Illinois teachers have joined thousands across the country in what is being termed "a bold experiment." They are students in the largest class in the nation: the Atomic Age Physics TV course, first to be offered coast-to-coast for college credit.

The course is telecast five mornings a week at 6:30 a.m. over 143 NBC stations, including six in this state. Twelve colleges and universities in Illinois have joined nearly 250 in the US and Puerto Rico participating in the project.

Idea for Continental Classroom—the title of the program—originated with the American Association of Colleges for Teacher Education and the National Broadcasting Co. Financial backing was provided by the Fund for the Advancement of Education and the Ford Foundation, and by six industries: Bell Telephone System, Standard Oil Co., General Foods Fund, International Business Machines, Pittsburgh Plate Glass Foundation, and United States Steel.

Dr. White Is Teacher

The national teacher is Dr. Harvey E. White, professor and vice-chairman of the physics department at the University of California. Other internationally known scientists, including Nobel prize winners, present lecture-demonstrations from time to time. Dr. White, a physics teacher for more than 30 years, also has written five college texts.

National AACTE coordinator for academic matters is Dr. Edwin P. Adkins, on leave as director of education at the State University College for Teachers in Albany, N. Y. Currently, he is devoting considerable time to an evaluative study of the project in an effort to determine its success.

Although the course was designed primarily to bring high-school teachers of science up to date on recent developments in physics theory and practice, the viewing audience is composed of persons in many walks of life. In addition to teachers, the course is being followed by engineers, homemakers, technicians, gifted high-school pupils, Army personnel, penitentiary inmates, technologists, the handicapped, college students, and others interested in learning more about recent scientific progress.

Cooperation on the part of colleges and universities has been outstanding. At Loyola University in Chicago, for instance, a special telephone service was instituted for course registrants. A Loyola physics professor volunteered to remain on duty each Saturday morning to answer any questions called in by interested citizens.

Praise for this joint undertaking by professional educators, commercial broadcasters, and industry has come from many sources. A mother in Naperville, for example, wrote: "The late-sleeping habits of our 15-year-old son had for years been a problem. Now, however – since the advent of Continental Classroom – it is he who serves as the alarm clock for the entire family!" In Quincy, the Industrial Association there has offered its services to industry as a clearing house for information and as a sponsor of "briefing sessions" in the association's conference room.

The press, too, has lauded the endeavor, with editorials appearing in papers both here and abroad. The *London Economist* had this to say: "One of the great virtues of this program – and of television – is that it brings the outstanding teacher to many more students." In the *Christian Century* there appeared this comment: "Some authorities believe that this 'largest class in the history of education' is deeply significant and will, if successful, influence the establishment of national television classes in other subjects."

Planning Another Course

And, according to the AACTE subcommittee, this prediction may come true. Research already has been instituted to determine what course should be offered in 1959-60. Under consideration are mathematics, chemistry, and political science.

Participating colleges and universities in Illinois—like others throughout the land—have local autonomy in implementing the course on their respective campuses. They may charge normal tuition fees and supplement the TV presentations in any manner they see fit. The majority are offering three semester hours of credit, with laboratory sessions, seminars, or problem-solving assignments compulsory. Dr. White has prepared both mid-term and final examinations, but the institutions may compose their own.

When the second semester of Continental Classroom begins Feb. 11, it is anticipated that enrollment will

increase significantly. Dr. White will devote the entire 80 lessons exclusively to nuclear and atomic physics. Persons wishing to enroll for credit or receive additional information may contact the local coordinators at the following cooperating institutions in Illinois: Dr. Harold Moore, Bradley University, Peoria; W. L. Groenier, Chicago Teachers College (North Campus); Dr. Glenn Q. Leffler, Eastern Illinois University; Dr. Akihiko Yokosawa, Illinois State Normal University; Mary L. McPartlin, Loyola University, Chicago; Mrs. Elsie McNabb, Millikin University, Decatur; Sister Mary Teresa, Mundelein College, Chicago; Dr. John E. Bower, Northern Illinois University; Sister M. Bonoventure, Rosary College, River Forest; The Rev. Erhard J. Kuester, Quincy College; Sister M. Josette, St. Xavier College, Chicago; or Roger M. Morrow, Western Illinois University. All of these institutions except Millikin offered the TV course for credit during the first semester. All 12 will offer credit the second semester.

Experimental Course Brings Physics Up to Date

Physics students at University High School, laboratory school of the University of Illinois College of Education, are learning about wave motion with two pieces of borrowed equipment—one from the nursery, the other from the research laboratory. They are being taught by a new method designed to bring high-school physics up to date and make it attractive and exciting to young people.

"Slinky," coil-spring toy in a triple-length "king-size" version, has been suspended from the ceiling and stretched across their physics laboratory. Wave motion can be observed throughout the length of coil when tensions are altered in any section.

From the research laboratory, they have borrowed the idea of the "ripple tank," a device permitting observation of water waves under varying conditions. Light is directed through water moving in waves over clear plastic obstructions of different shapes. The wave shadows fall on a screen,

—*U. of I. Photo*

THE "RIPPLE TANK" used at Urbana's University High School for the experimental physics program was built by University of Illinois laboratory technicians. Prof. David Page, instructor for the course, and a student watch a shadow of waves moving through the water.

where the students study them through home-made stroboscopes.

Both experiments have been devised for the new physics course, which was tried out during 1957-58 in University High School and seven other schools throughout the country. Reports from the schools indicated "the bright students are devouring the new material, and mediocre students are being stimulated to do very well." There are about 200 schools and more than 10,000 students participating throughout the nation this year.

The course is being prepared by the Physical Science Study Committee, a nonprofit group organized in 1956 with a grant from the National Science Foundation. Headquarters of the project is Massachusetts Institute of Technology, which is administering the work. The National Science Foundation, Ford Foundation, Fund for Advancement of Education, and the Alfred P. Sloan Foundation are sponsoring the program.

The PSSC hopes to overhaul and update the science curriculum of the nation's high schools, to bring science courses into line with recent developments—"so that students won't spend an entire physics course on Newton's laws and then hustle through atomic theory in the last two weeks."

The physics course involves a new textbook; a set of monographs to provide further reading; designs for simple do-it-yourself laboratory equipment to illustrate the principles covered in the text; a series of teaching films, with teaching notes, to show what can't be covered in the lab; teachers manuals; and appropriate examinations.

Summer institutes and in-service programs are being sponsored by PSSC in order to prepare high-school science teachers to teach the course.

This is what Illinois citizens will be seeing on many billboards this year.

This month approximately 375 outdoor posters, calling attention to the urgent need for more teachers, will appear throughout every county in the state of Illinois. They are a part of a project sponsored jointly by the Illinois Association of School Boards, the Illinois Congress of Parents and Teachers, and the Illinois Education Association, in cooperation with the Outdoor Advertising Association of Illinois. This is the third year for the cooperative venture.

The three organizations—IASB, ICPT, and the IEA—pay the costs for the poster sheets and shipping charges. Outdoor Advertising Association, as a public service, provides the space and the services required in putting up the posters.

The primary purpose of the billboard campaign is to help improve the attitude of the public and the legislature toward the needs of Illinois schools. The poster this year stresses the need for good schools, as well as the need for more teachers. Everyone should realize that good schools include many things – good teachers; adequate and appropriate equipment; well-planned buildings; interested, well-informed, capable school boards; cooperative, active parents; and sufficient money.

All citizens (This includes every employee of the board of education.) should strive to make every school better than it is today. They should work to eliminate provincialism without sacrificing the benefits which accrue from vision, ability, and activity on the local level.

SYMPHONY

(Continued from page 195)

The youngster who finds a parallel in the study of music and in explorations into the realm of science and mathematics would be surprised at the distinguished company he has.

Of 46 top scientists and deans of leading US technological institutions who responded to a recent poll by the American Music Conference, 70 percent maintained that the study of music is of great importance in preparing youngsters for scientific pursuits. Two thirds of the scientists queried said they continue to play instruments themselves.

In another poll conducted by AMC, children in 38 of 43 families headed by career scientists, play instruments. Half of these family groups are multiple instrument families. Among them are some families of six, all of whom play instruments. And several children are able to perform on three different instruments!

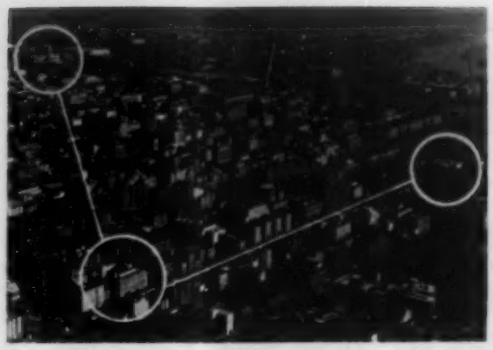
In the galaxy of noted US scientists and leaders in technology are many who play instruments in their leisure hours. Dr. Edward Teller, the "father of the H-Bomb" and associate director of the University of California's Radiation Laboratory, relaxes regularly at the piano.

'Recalls Band Days'

Dr. Vannevar Bush, top scientist on the National Defense Committee, plays the flute. Dr. James Killian, former president of Massachusetts Institute of Technology, likes to recall his band days as a schoolboy. As MIT president he saw to it that budding engineers and scientific leaders received a more meaningful education through inclusion of courses in music, art, and literature, along with their calculus and advance hydrodynamics.

In an era clouded by the shadow of the intercontinental ballistics missile, and the constant threats of war, perhaps the greatest tribute yet paid to music-making in the classroom came from the Evanston schoolboy who laid down his clarinet to say:

"I don't seem to have any ugly thoughts when I play. It just relaxes me and makes me feel good."



IN THE HEART of our nation's capital—only five blocks from the White House (circled at right) and a swift cab trip from Capitol Hill (upper left)—is the new home of the National Education Association.

D-Day for Education

The building that the faith of more than a half million American teachers built—the Education Center of the National Education Association—is to be dedicated during special ceremonies in the nation's capital Feb. 8 to 10.

The eight-story structure of blue-green glass and white marble represents a $7,000,000 investment by these teachers—members of affiliated educational organizations. Funds to build the center were raised during a five-year campaign launched in 1953.

Called the "Miracle on Sixteenth Street" by Frank W. Hubbard, NEA assistant executive secretary for information services, the new home of the world's largest professional organization is a monument to the American teacher and to the association which is dedicated to the "welfare of children and to the education of all people."

Dr. Hubbard is general chairman of the Dedication-Days planning committee. He said that more than 1000 local associations are now making plans for community observances.

Among distinguished guests invited to witness ceremonies in Washington will be members of Congress, government officials, NEA officers, state directors, presidents and executive secretaries of state education associations, a group of local association presidents, and representative members of the NEA and departmental staffs.

Prominent laymen who will join in D-Day celebrations include Erwin Canham, editor of *The Christian Science Monitor*, and presidents Karla V. Parker, National Congress of Parents and Teachers; William Shannon, National School Boards Association; and Henry Toy, Jr., National Citizens Council for Better Schools.

Speakers at the opening ceremony on Sunday, Feb. 8, include Sarah Caldwell, classroom teacher from Akron, Ohio, and former NEA president; Karl H. Berns, NEA assistant executive secretary for field operations; and A. C. Flora, chairman of the NEA board of trustees.

During the next two days, programs in the center's 700-seat auditorium and in the Presidential and Congressional Rooms of the Statler Hotel will feature formal addresses by distinguished congressional and government officials and educators and discussions on the essentials of effective education by prominent laymen.

Among NEA officers, both past and present, who will play important parts in the dedication ceremonies are Pres. Ruth Stout; past-presidents Lyman V. Ginger and Corma Mowrey; Vice-Pres. W. W. Eshelman; former Executive Secretary Willard E. Givens; and NEA Executive Secretary William G. Carr.

Other educators who will either make formal addresses or speak in discussions include Grayson Kirk, president of Columbia University; John Fischer, superintendent of schools, Baltimore, Md.; Stephen M. Corey, dean, and John K. Norton, professor emeritus, Teachers College, Columbia University; Martin Essex, superintendent of schools, Akron, Ohio; Ewald Turner, president of the NEA Department of Classroom Teachers; Mrs. Edna Griffin, classroom teacher from Philadelphia, Pa.; and Arthur F. Corey, executive secretary of the California Teachers Association.

Bringing a special message on "Education and the National Welfare" will be Arthur S. Flemming, new secretary of the US Department of Health, Education, and Welfare. At the final session Tuesday night Dr. Carr will sum up the Dedication-Days observances following a brief candlelight ceremony. Music will be provided by the NEA choral group. Robert A. Luke, president of the NEA's Staff Organization, will present a gift for the new building.

—NEA Photos by Carl Purcell

ILLINOIS TEACHERS contributed $554,147 toward the new NEA headquarters building in a five-year campaign. Of this total, $540,150 came from 3601 new life memberships. The building is located on Washington's "Avenue of Presidents."

School Nurses Explain Organization and Purposes

One of the newest sections of the Illinois Education Association is the Illinois Association of School Nurses. Investigation and original organizational work was done by a steering committee formed at a meeting of school nurses at New Salem State Park in June, 1957. In October several local divisions of school nurses were organized; a constitution was adopted at a statewide meeting at Allerton Park. In November the IEA board of directors approved the submission of the constitution to the IEA Representative Assembly, and at the 1957 Annual Meeting the assembly voted in favor of sectional affiliation for IASN.

IASN was organized to promote better school health programs; to improve the welfare and raise the educational standards of school nurses; to encourage fellowship and unity of thought and action among them; and to encourage membership in professional nursing organizations.

Any registered professional nurse is eligible for membership in IASN if she is an active member of the IEA, is a public health nurse certified in Illinois, or is working toward certification while employed full-time as a school nurse. For membership information write to Dorotha F. Dean, 620 East Garfield, Decatur.

On the executive board of IASN are Mrs. Florence Thompson of Park Forest, president; Mrs. Helen Dimschultz of Skokie, secretary; Miss Dean, treasurer; one member-at-large; one member from each of the several local divisions; and the nurse employed by the Office of the Superintendent of Public Instruction, who serves as an ex-officio member.

—Dorotha F. Dean, Decatur; treasurer, Illinois Association of School Nurses.

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QUADRENNIUM

(Continued from page 177)

created an auditing division within the office, which has been at work since the early part of this year. It has been of great assistance to school districts throughout the state in the proper preparation of reports which are subject to audit by our office. This division has more than earned its keep in monies it has saved.

With all the new assignments which have been given to the office by the legislature, and there are many more than the ones I have enumerated, we never lose sight of the fact that educational leadership geared toward the improvement of the classroom is still predominantly important. Without that philosophy, all the rest matters little. Actually, all these other programs and services are geared to improved teacher-pupil relationships, although the average layman may not realize this fact. Under the American system of education, the goal is a full educational opportunity for every boy and girl.

As a closing observation, let's consider the criticism which education has received. Some of it is in order, and some of it is not. We are not good teachers and administrators if we are not "all ears" to constructive criticism. Such criticism and appraisal is needed in order that educational progress may continue. We must expect criticism of another kind, even though not in order. As one of my fellow chief state school officers recently said: "If we have a legal problem, we properly go to a lawyer for advice. If we have a water or sewer problem, we rightfully consult a municipal engineer. But if we have an education problem, everyone thinks he or she is the last word in authority just because he or she has had an education."

Finally, I believe that guidance today occupies a more important

place than ever before, and rightfully so. Much remains to be done in the field of guidance. For in our present social order, a competent and adequate guidance program must satisfy a need that can be taken care of in no other way. The challenge in this field is certainly one which requires a high priority in educational attention. We in the field of education have accepted every challenge and worked to meet them.

As I leave the office, many unsolved problems remain. I hand on to my successor good wish and support, statewide in nature, and wish him every success in coping with the many problems with which he will be faced. The most important task of government is that of continually working to improve public education of our children, the most valuable resource of any land.

ELEMENTARY SCIENCE

(Continued from page 182)

With a large nail, some insulated bell wire, and a dry-cell battery, simple experiments demonstrate the properties of an electromagnet. Blackboard drawings explain further how an electromagnet works. A simple electric motor is constructed with nails, a large cork, a short piece of glass tubing with one end melted closed, several feet of insulated bell wire, and a mounting board.

An outdated telephone's simple electric generator demonstrates the application of energy to the rotor, or armature, to produce electricity.

Many other uses of electricity and electromagnets can be demonstrated through the construction of elementary flasher signals, buzzers, bells, stop-and-go signals, and magnetic cranes. Several students learned the Morse Code in order to send "dot and dash" messages with flashers or buzzers. A large traffic signal—with red, yellow, and green lights—was built and operated by the students.

Upper-grade students at Tallula built a model town as a culmination of their unit on electricity—adding street lights and traffic signals which worked. They also built a buzz board which contained questions and an-

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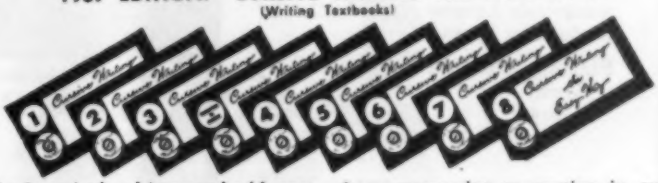

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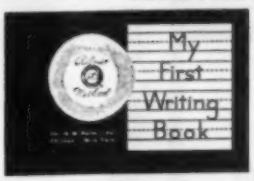

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swers about inventors and inventions related to electricity (A wrong answer brings a loud buzz.), an electric boat, and a telegraph.

Chemical as well as physical and electrical movement can be emphasized in elementary science classes. Mrs. Agnes Ingham's sixth-grade students at Greenview Grade School have assembled a science kit at a cost of only $1.60, to help them in their study of chemistry. Articles from kitchen shelves, and some donated by interested persons in the community, have been added to supplies purchased from the dime-store.

Formation of crystals through chemical reaction was visible to the students when they made a "chemical" garden by pouring salt, water, and coloring over cinders. An Epsom salts solution was brushed on glass, and then pictures were painted over it. Students could watch the formation of crystals on the glass.

Simple rockets were designed by the students—using such materials as pop bottles, corks, paper vanes, handkerchief parachutes, etc. A vinegar and soda solution provided the launching power, illustrating the propellant power of gases.

As a part of their science program, the seventh- and eighth-grade classes at Tallula study first aid. Class members upon completion of the course receive Red Cross Junior First Aid Certificates. The greatest emphasis is on safety; the second objective is what to do—and not to do—in case of accident or illness.

Students learn artificial respiration, and must be able to administer it continuously for five minutes. They practice bandaging, and master 22 different bandages. Simple splints are demonstrated.

Students are required to make a scrapbook of pictures and articles about real accidents, adding what first aid should be administered in each accident. The class is divided into groups, and each group writes a play concerning some phase of safety which would apply to the community. Each play is presented before the rest of the class. Correlating art and safety, the class draws a safety poster.

Students Are Tested

Mrs. Lucille Raffety, the teacher, gives students a test in both practical work and on textbook material.

These are but a few of the ways in which elementary teachers can guide youngsters to observe their surroundings and to stimulate a curiosity to find out more about them.

Mr. Nachtnebel says the most important step is "to stimulate the desire to learn the answers to the questions of why and how," and to teach the student to use reference materials to help him.

All of these teachers agree that the best way to do this is to provide the greatest amount of firsthand experimentation possible. Mrs. Wilson urges, "Allow them the pleasure and thrill of learning by trying it out for themselves."

Elementary science in a rural area does have a special significance. And Mrs. Dierks adds, "The world of nature is amazing, exciting, and interesting to everyone; and it is all free."

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Or are you just contented
That your name is on the list?
Do you attend the meetings,
And mingle with the flock,
Or do you stay at home
And criticize the knock?
Do you take an active part
To help the work along?
Or are you satisfied to be
The kind who just belongs?
Do you work on committees,
To see there is no trick?
Or leave the work to just a few
And talk about the clique?
So come to meetings often,
And help with hand and heart;
Don't be just a member
But take an active part.
Think this over, sister,
You know right from wrong.
Are you an active member,
Or do you just belong?

—Anonymous

DELINQUENCY

(Continued from page 193)

or the tolerance level of the authority figure. Hence, delinquency trends—up or down—may reflect a shift in the "get-tough" policy in dealing with young offenders, rather than in any real increase or decrease in the incidence of delinquency.

With the behavioral deviates more than with handicapped children, there is a heavy social-environmental-cultural involvement. Even when the delinquent act is conceived as an interaction between the factors under the skin with factors in the environment, the tendency has been to over-emphasize the variables in the personal make-up, and to overlook the cultural and sub-cultural forces that act as powerful determinants of behavior and misbehavior.

The community will face its responsibility to delinquent children only when it sets up systematic techniques to uncover these children at an early date, to study and diagnose their needs, and to utilize all the community's resources in helping and treating them. This should not be a hit-or-miss business. It must be a systematic and scientific search for vulnerable children and for children who need help. This must be followed by a program of aid in which all the professional personnel in the community take a positive point of view, and combine, through effective teamwork, to help each child.

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NEWS in Education

DATES AND PLACES

Teaching Career Month—April

"You Can't Pull Good Teachers Out of a Hat" is a special leaflet describing the purposes of Teaching Career Month, which will be observed in April, and listing materials available for local observances. For a copy of the booklet, write to Teaching Career Month, National Education Association, 1201 16th Street NW, Washington 6, D.C. This second observance is being coordinated by the NEA Press and Radio Relations Division.

PR Conference to Be Mar. 14

A government relations executive from California; experienced newspaper and radio and TV representatives from Rockford and Peoria; and an Illinois teacher-administrator with 26 years of experience will speak at the 11th annual School Public Relations Conference. The meeting, sponsored by the Illinois Education Association and Illinois State Normal University, is to be held at Normal on Saturday, Mar. 14.

Robert E. McKay, who handles legislative activities of the California Teachers Association, is to be the luncheon speaker. A past-president of the National School Public Relations Association, he also is a former newspaper reporter and editor who spent three years as a public relations officer in the Marine Corps.

Mr. McKay's address, like that of the opening general session and section meetings, will be keyed to the general theme of "Improving School Public Relations."

The all-day conference will open with a general session at 9:30 a.m., following registration. "Educators and Editors" will be the topic of the interview-type talks by C. Hjalmer Nelson, managing editor of *The Rockford Morning Star*, and his

Mr. and Mrs. Nelson

wife, Isadora Haight Nelson, who is Sunday editor. Both attended the University of Wisconsin and have been with the newspaper since 1930.

Mr. Nelson began his newspaper career on the Escanaba, Mich., *Daily Press;* Mrs. Nelson, with the *Freeport Journal Standard.*

Representing radio and TV personnel on the opening panel will be Richard Roll, director of public affairs and news for WTVH, Peoria, since the spring of 1958. He began his career in Zanesville, Ohio, and has served as White House news correspondent for the Liberty Broadcasting Co. and with the Columbia Broadcasting Co. in New York. Recently he represented

—Photo by John Howell

Mr. McKay

—Rex Portrait Studio and Camera Shop

Mr. Roll

WTVH at the Brussels Fair, at the Marine landing in Lebanon, and in Moscow. He served as a teacher of radio, speech, and drama at Heidelberg College, Ohio, although not a college graduate.

Representing educators on the opening panel will be the IEA public relations chairman, Supt. L. Goebel Patton of West Frankfort. He served as president of the IEA Southern Division and public relations chairman for the division before becoming state chairman.

Core of the conference will be the section meetings at which newspaper, radio, and TV representatives and school board members will serve as consultants.

Reservations made in advance will be $2.50 per person. A fee of $1 and luncheon admission of $2 will be charged those not registering in advance. Details of the conference are being worked out by the IEA division public relations chairmen and the conference co-chairmen, Claude Vick of the IEA and Gertrude Hall of ISNU.

'Individual Freedom'

The 1959 session of the Williamsburg Student Burgesses will convene Feb. 15 for three days of discussion on the theme "Individual Freedom: A Challenge To All Nations." Invited to attend will be secondary school students from 34 foreign countries and from the 49 American states. The event is co-sponsored each year by Colonial Williamsburg and other educational organizations.

The American representation will consist of presidents of state chapters of the National Association of Student Councils. The students from abroad are members of *The New York Herald-Tribune* Forum for High Schools, all between 16 and 18 years of age, selected in their own countries in a national competition held under the auspices of their ministries of education.

The main purpose of the student burgesses is to help prepare young people for adult responsibilities as citizens of democratic nations. The program—through discussion sessions, talks by international authorities, and historic tours—will emphasize better understanding of traditions, political institutions, and the democratic heritage.

'Fundamentals for Children'

The 1959 study conference of the Association for Childhood Education International will be held in St. Louis, Mar. 29 to April 3. "Fundamentals for Today's Children" is the theme of the meeting for teachers, school administrators, parents, and others concerned with children ages two to 12.

General sessions will feature speakers in the fields of child development, child welfare, education, and international relations. Throughout the sessions an important consideration will be current sociological and scientific trends. Discussion groups on three basic subjects—research affecting children, creativity, and skills—will be implemented by discussion sessions.

Registration fee is $12; undergraduate student registration fee, $4.50. For further information, write to the association at 1200 15th Street NW, Washington 5, D. C.

Boy Scout Week

The Boy Scouts of America will celebrate their 49th anniversary from Feb. 7 to 13. During Boy Scout Week many schools will wish to include student-planned assembly programs, exhibits, or demonstrations to focus attention on citizenship participation by youth. Scout groups can develop an assembly action program about their activities. PTAs might plan similar programs. The school library can use posters and displays; scouting demonstrations or encampments could be held at the school.

National Science Fair

More than 100 awards—cash, scholarships, and trips—will be given to high-school students who participate in the National Science Fair May 6 to 9 in Hartford, Conn.

To be eligible for competition, a student must be in grade 10, 11, or 12; must have completed a science project on his own; and must have won in his regional, district, or state fair which is affiliated with the National Science Fair.

There are categories for biological and for physical sciences and separate competition for boys and girls.

Suggestions for projects are included in the *Sponsor Handbook* of the Science Clubs of America, which conducts the fair. Also available is *Thousands of Science Projects,* which can be ordered for 25 cents a copy from SCA at 1719 N Street NW, Washington 6, D. C. Contest rules are also available from this address.

AASA Annual Convention

"Education and the Creative Arts" is the theme for the 1959 convention of the American Association of School Administrators, to be held Feb. 14 to 18 in Atlantic City, N. J. Not only will each of 10 general sessions include a performance by a well-known artist or group, but many clinics, panels, discussions, etc., will feature creative arts.

Group sessions on Monday, Tuesday, and Wednesday afternoons will include debates, case studies, and research projects. In addition to the arts, subjects will range from school finance to the effects of television on children.

Pianist Van Cliburn will perform at the final general session on Wednesday. Other musical programs will be given by the Philadelphia All-City Choir and Eastman School of Music Symphony Orchestra. A ballet by the Jose Limon Dance Company will be presented Monday, as well as talks on various areas of the fine arts.

At the opening session a representative from Walt Disney Productions will present a program on how images are captured and used imaginatively through the medium of graphic arts. Also scheduled for Saturday are reports on a study tour of Russian schools and on Capitol Hill activities.

Some of the speakers to be featured are F. Curtis Canfield, dean of Yale University's School of Drama; John Ciardi, poetry editor of *Saturday Review;* Louis G. Cowan, president of the CBS television network; John S. Detlie, architect from Seattle, Wash.; and Reuben Gustavson, president and executive director of Resources for the Future, who will give "a philosophical wrap-up of the significance of the artistic climate to the creative human being."

The NEA Department of Classroom Teachers will sponsor several events for teachers and administrators attending the convention: an open house Sunday evening; a luncheon on Tuesday; and a meeting with the American Educational Research Association, for a program on teacher morale.

The traditional Illinois Breakfast will be held Feb. 18 at 8 a.m. in the ballroom of the Sheraton-Ritz Carlton Hotel. Tickets cost $2.90 and will be available at the registration desk, at University of Illinois headquarters, and from Illinois Education Association staff members.

'Action on Curriculum Issues'

The Association for Supervision and Curriculum Development will hold its annual conference Mar. 1 to 5 at the Netherland Hilton Hotel in Cincinnati, Ohio. The theme will be "Action on Curriculum Issues." Activities planned for the meeting include assemblies about current issues in education, tours, exhibits, clinics on curriculum improvement, and study groups to discuss research and practices in subject areas.

Contemporary Arts Festival

The University of Illinois biennial Festival of Contemporary Arts will be Mar. 1 through April 5. Events scheduled include Exhibition of Contemporary American Painting and Sculpture, Mar. 1 to April 5; contemporary opera, Mar. 1; festival play, University Theatre, Mar. 4 to 7; selected contemporary films, Mar. 5; art lectures, Mar. 8, 15, and 22; concert by University dance division, Mar. 14 and 15; Anna Sokolow dance company, Mar. 17; and University orchestra and chorus, Mar. 23.

Among other events will be chamber music recitals by faculty and students; lectures in the fine arts; exhibits of architecture, city planning, printing design and crafts; and radio and television programs.

NAMES IN THE NEWS

First Assistant Superintendent

Guy E. Cornwell, superintendent of Taylorville Community Unit Schools for the past 10 years, is the new first assistant superintendent in the Office of the Superintendent of Public Instruction. He succeeds Eric Johnson, now administrative assistant to the president of Illinois State Normal University. Mr. Cornwell had been in Taylorville since 1930, as junior-high principal and elementary superintendent.

"Welcome, Alaska"

With 49th State at hand, here's timely idea adaptable for any grade, for it appeals to boys and girls of all ages.

After social science study of Alaska or an Alaskan project in any of its phases, your class or room might put on a "Welcome, Alaska" party, "TV" show, assembly or PTA program. Children could dress as 49-er, eskimo, sourdough, bear, seal . . . Each tells importance to Alaskan growth. For igloo ice cream, mold in cups.

This Alaskan map big aid–

Newest 1959 Map of Alaska by Jeppesen only costs 25¢. Nothing comparable at any price! **1**—Is in full color, shaded relief with three-dimensional look. **2**—Shows roads, rivers, even air routes. **3**—Gives thumbnail sketch of history of Alaska's development. **4**—Includes teacher-tested, class-tested lesson-helps and project by the noted geography teacher, Ina Cullom Robertson.

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Speech, Hearing Specialist

The newly created post of specialist in speech and hearing in the US Office of Education has been filled by Donald A. Harrington, associate professor of speech at the University of Florida. He will be concerned with school programs for children and youth with impaired speech and hearing.

Ashby Promoted at NEA

On Jan. 1 Lyle W. Ashby, NEA's assistant executive secretary for educational services for the past three years, assumed a new position as deputy executive secretary of the National Education Association. He has been with the NEA since 1928. He has served as assistant secretary for professional relations in the executive secretary's cabinet, assistant director of the publications division, director of observance of American Education Week, and was active in planning for the NEA Centennial.

Dr. Ashby's new responsibilities include supervision of the work of the personnel director and the convention coordinator; development of agenda for meetings of the NEA executive committee and board of directors; formulation of long-range plans for consideration by governing bodies; and preparing work plans to implement their decisions.

Planning for a Council on Instruction has been carried on under Dr. Ashby's guidance. Current projects for which he has responsibility include a clearing house service on the academically talented student; problems of juvenile delinquency; and development of consultant services in elementary education.

Legislative Consultant

Roy A. Archibald, teacher and vice-mayor from San Mateo, Calif., has been named West Coast legislative consultant for the National Education Association. He will make his headquarters with the California Teachers Association in San Francisco. His assignment calls for consultation and active liaison with the western states in the development of plans and organization for active support of NEA federal objectives.

Mr. Archibald has taught at San Mateo Junior College and San Francisco State College.

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HELPS FOR TEACHERS

Films for Free Loan

Both color photography and animation are featured in a new 17-minute safety film for boys and girls. Safe practices at home, at play, and on the highway are presented dramatically. "Lucky You," which won a first prize for educational films, was produced by the Coca-Cola Co. with the cooperation of the National Safety Council. Prints are available from local Coca-Cola bottlers.

Four color films for home economics are available to schools, colleges, and women's groups. "Treasure for Your Table," 26 minutes in length, shows many unique processes necessary in the production of finest quality tableware; it was produced in three modern plants which manufacture china, glassware, and silverware. All products are shown in correct use in attractive table settings. Three 14-minute films on meats available free are "Our Mrs. Fix-It," showing selection, preparation, and serving of meats; "The Right Track," on nutrition facts about meats; and "It's Lamb Time," on planning, preparing, and serving meals featuring lamb. These films are all available from United World Films, Inc., Free Film Department, 542 South Dearborn Street, Chicago.

Other films available from United include "Mainline, USA," which tells of teamwork in the railroad industry and stresses its importance to the nation's expanding economy; it is a 20-minute film. "Behind the Ticker Tape" is a 21-minute color film which shows the growth of the American Stock Exchange and a complete stock transaction from the time an investor places his order. United is distributing a new catalog of free-loan films about many subjects—homemaking, travel, medical research, insurance, etc.

"Solving School Lunch Problems with Paper" is a 23-minute filmstrip offered by the Field Research Division, Paper Cup and Container Institute, 342 Madison Avenue, New York 17. It presents ideas for superintendents and lunch managers on many phases of preparing attractive and efficient school lunches.

West Point Contact Man

Educators and guidance counselors in Illinois desiring admissions information on the United States Military Academy now have a personal contact at West Point. Capt. Clinton Granger, Jr., has been named as the admissions officer for the Fifth Army area which includes Illinois and 12 neighboring states. His address is Admissions Division, USMA, West Point, N. Y.

Members of this newly established division are prepared to answer questions on admissions requirements and procedures, to supply informational material for guidance use, and to arrange for academy participation in secondary school guidance activities.

UI Has Busy Film Service

Last year the University of Illinois Audio-Visual Aids Service—world's largest educational film lending library—had the busiest year in its history. Shipments of films and filmstrips totaled 113,637. While the bulk of the distributions went to schools and community groups in Illinois, shipments also went to all 48 states and Alaska and to schools and organizations in many other countries of the free world. The materials were used by 2403 schools, 83 public libraries, and 1336 other organizations last year.

The Audio-Visual Aids Service now has 14,936 film prints of 5816 titles, 3711 filmstrips, and 1455 recordings.

A new booklet lists 123 commercial and business films available from the service. Some are training movies; others are descriptive, informative, or entertaining.

Copies of the bulletin, "1959—Commercial and Business Films," may be obtained from Thomas H. Boardman, supervisor of the UI Audio-Visual Aids Service.

Magazine for Young Men

The first issue of *Horizons*, "a publication for young men," came out in September. It is primarily concerned with up-to-date information about jobs and careers. Also included are topics such as sports and social activities which appeal to the teen-ager. The colorful magazine costs $7.50 a year. Send requests to *Horizons*, 160 Warren Street, Boston 19, Mass.

New Films Available

Two new color films available for high-school chemistry are "Combustion" and "Chlorine—A Representative Halogen"; they are 14½ and 16½ minutes long, respectively. The films are simple and direct, and are photographed as close to the action as possible so the student can observe demonstrations as though they were on his own bench. Animation is used to show ionic movement, etc. The films are sold by John Sutherland Productions, Inc., 201 North Occidental Boulevard, Los Angeles 26, Calif.

A new 10-minute documentary film, "Explorer in Space," is believed to be the first complete motion-picture record of a successful satellite launching. Released by US Information Service, it explains the purposes of rocket research with resulting data being made available to scientists. The assembly of the Jupiter-C rocket is shown at Cape Canaveral. Information about public use of the film may be obtained from United World Films, 1445 Park Avenue, New York 29.

AWARDS AND GRANTS

To Study Elementary Libraries

The US Office of Education has announced a grant of $25,000 to the Graduate School of Library Service of Rutgers University for an investigation of the "Effectiveness of Centralized Library Service in Elementary Schools."

This is a pilot project, designed in the initial stage to determine whether the contribution of the library in the elementary school can be tested objectively. If valid methods are found, they will later be applied to a sufficient group of schools to determine the general effectiveness of elementary school libraries.

In the initial stage, a small number of matched elementary schools, with and without school libraries, will be studied intensively. Analysis will be directed to the reading of children, their competence to use informational and library resources, actual utilization of such resources, and instructional methods adopted by teachers with and without access to centralized school libraries.

Prof. Mary Gaver, director of the project, says, "The centralized school library is championed by many educators and librarians as a major influence in the development of reading skills, habits of research, and a broad range of reading on the part of children, as well as a service agency to the classroom teacher and to the curriculum."

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Help for Graduate Students

Applications are being considered for graduate fellowships and educational grants for 1959-60 for the study of human development and family life at The Merrill-Palmer School in Detroit.

Fellowships of $1000 (or more, depending on need) for the academic year are awarded on the basis of merit; some may be extended into the summer for students in the counseling training program. A limited number of larger grants are available to advanced professional persons. Grants, covering tuition, are awarded on the basis of need. For further information, write to the registrar of the school at 71 East Ferry Avenue, Detroit 2, Mich. Immediate application is advised.

The program should be of interest to students in such fields as anthropology, child development, counseling, and psychotherapy, education, home economics, nursing, religion, sociology, etc.

Help for SIU's String Program

A $2000 Rockefeller Foundation grant has enabled Southern Illinois University's music department to engage violinist Joseph Szigeti to assist in its string instruction program for area teen-agers. The award was made in recognition of "success in the field of string and orchestral instruction for young musicians." The year-old program includes a Youth Symphony Orchestra and special Saturday morning string class with 70 participants from southern Illinois.

Mr. Szigeti will spend four days at Southern, April 9 to 12, working with SIU students and the youngsters. He also will appear in a public solo recital, perform with the Southern Illinois Symphony Orchestra, and speak and play at an Intercollegiate String Festival on the campus April 11.

IN THE HALLS OF LEARNING

Sample College Courses

A summer program previewing college science courses for high-school students will be enlarged by Southern Illinois University next year. Offered for the first time this past summer, the series of no-fee, no-credit courses in microbiology, zoology, chemistry, botany, physics, and health education drew more than 60 prospective college students who not only endorsed the project by regular attendance but voted for adding more courses next year.

Dr. Chalmer Gross, associate professor at SIU's University School, said courses in geography, geology, sociology, mathematics, psychology, and economics will probably be added next summer. In evaluating the project at the end of the term, students were overwhelmingly in favor of expanding it to encompass freshman-level samplings in most of those fields. They ranked microbiology and physics lectures most interesting and suggested more laboratory study in chemistry and more student participation.

New Master's Degrees at NIU

Northern Illinois University will offer work toward the master of arts and master of science degrees beginning next semester. Approval for granting these degrees was given recently by the Teachers College Board. Beginning with the 1959 summer session the university will add 116 courses at the senior and graduate levels and a sixth-year program in teacher education.

The master of arts degree will be open for majors in English, social sciences, or speech. The master of science degree will be granted in biological sciences, business, earth sciences, mathematics, and the physical sciences. The fine arts and music departments also have been authorized to offer graduate work.

To qualify a department for graduate work, under Teachers College Board regulations, one half of its faculty members most possess the earned doctor's degree.

Extension Courses Announced

Twenty-three extension courses will be offered by Illinois State Normal University during the second semester in 18 communities: Decatur, East Peoria, Eureka, Fisher, Granville, Joliet, Lincoln, Ottawa, Pana, Pekin, Peoria, Pontiac, Princeton, Rantoul, Springfield, Streator, Watseka, and Wilmington.

Requests for information may be directed to Dr. Francis R. Brown, director of university extension and field services at ISNU. He welcomes suggestions from teachers and school administrators.

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Health Ed Program Expands

More than 100 students are majors this year in the largest college health program in the nation—at Southern Illinois University. With a faculty of 14 specialists, eight of whom have doctoral degrees, SIU's health education department has received widespread recognition—not only for its size, but also for its services to schools and communities in Southern Illinois.

The staff helps to plan and conduct city, county, and regional health meetings and to develop county public health departments and school health and mental health clinics, explains Dr. Donald N. Boydston, department chairman.

When Dr. Boydston came to Southern three years ago, the department consisted of four teachers, seven undergraduates, and no graduate students. Support from the university and the area has enabled him to triple the faculty and greatly expand the program.

Last year, at the request of school administrators, the first program in the nation for the preparation of school health coordinators was established at Southern. The new curriculum will qualify a person to teach elementary subjects, health and the biological sciences on the high-school level, and at the same time coordinate health services for all pupils in an elementary-secondary system.

The SIU department is one of the few in the nation offering a minor in safety education which meets National Safety Council recommendations.

"The American Public Health Association recently estimated that the nation needs some 6000 public health educators," Dr. Boydston said. "We are one of the few schools preparing such teachers." The department may be ready to begin a doctoral program by this fall.

Last year the General Assembly passed a law requiring Illinois schools to give pupils as much instruction in health education as in physical education. This will increase the demand for health education teachers and also will influence physical education majors to take more health courses than they have in the past. Another law makes it mandatory for driver education instructors to have a minor in safety education by 1960. At Southern industrial education majors are advised to minor in safety education; all freshmen are required to take a basic health education course.

Two state health agencies, the Illinois Society for the Prevention of Blindness and the Illinois Heart Association, have representatives in the department.

Engineering Schools Abroad

Studying foreign engineering schools was the subject of two recent projects of the American Society for Engineering Education. Six experts in engineering teaching were sent to India to study plans for a new engineering school at Kanpur; they visited universities, colleges, and industrial plants. Eight educators participated in an Exchange Mission on Engineering Education to the Soviet Union; they were to bring back curricula, books, and other material.

Special Classes for Deaf

Special instruction for pre-school children who are deaf or hard of hearing is available at Southern Illinois University.

Parents within commuting distance of Carbondale who would like to enroll their children may contact the SIU Speech and Hearing Clinic to arrange for hearing tests. Pupils will be registered at University School. The class will meet for two hours each weekday afternoon. In most cases, transportation costs will be paid by local school districts with state assistance. Parents may obtain transportation information from county superintendents.

NCE Extension Courses

Fourteen late afternoon and evening extension courses in elementary education will be offered in 11 Chicago-area communities by National College of Education during the second semester, which begins Jan. 27. Classes ranging from art and audio-visual education to science and government will be presented at Brookfield, Crystal Lake, Des Plaines, Downers Grove, Glenview, Harvey, Palatine, Riverside, Roselle, Villa Park, and Zion.

In addition to this extension schedule, 20 late afternoon, evening, and Saturday courses for elementary teachers will be given on the college campus in Evanston and Wilmette.

Information about courses, both graduate and undergraduate, may be obtained by writing to the NCE registrar at 2840 Sheridan Road, Evanston.

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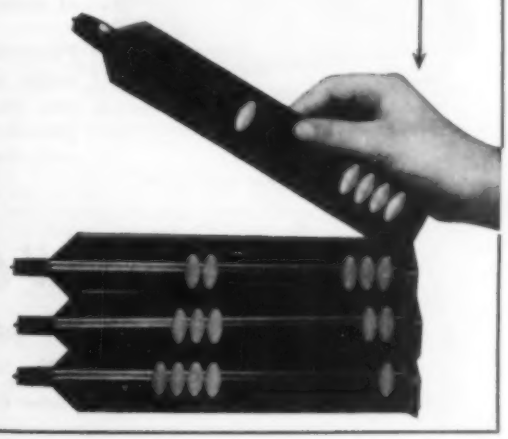

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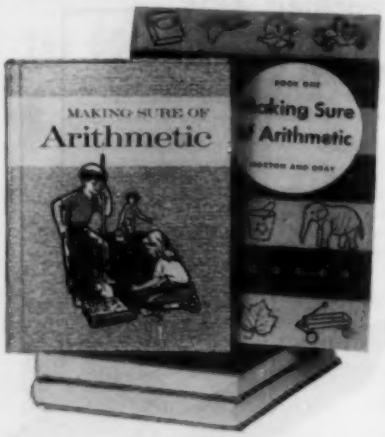

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International School at Argonne

An International School of Nuclear Science and Engineering is being conducted by the Atomic Energy Commission. The 57 participants—50 of them from 18 foreign countries—are now attending sessions at North Carolina State College or Pennsylvania State University. In February they will take the second half of the course at Argonne National Laboratory in Lemont.

The training project for scientists and engineers is a continuing part of the President's "Atoms-for-Peace" program.

New School of Nursing

Illinois Wesleyan University will establish a collegiate School of Nursing to begin September, 1959. Previously the university had an affiliated nursing program with Brokaw Hospital. Students enrolled in the previous four-year affiliated program will be able to graduate under the requirements as stated when they entered the school. In the new program students will spend the first, second, and fourth years on the IWU campus. The third year of study will be in various hospitals throughout the state. Upon completion of the program, they will receive a bachelor of science degree with a major in nursing.

Visiting Professors in Speech

Two speech authorities will lecture at Southern Illinois University during the winter and spring terms next year. They are Herbert Koepp-Baker, prominent speech pathologist regarded as the top specialist in cleft palate, and A. Craig Baird, author of numerous books and faculty member at the State University of Iowa.

Mr. Koepp-Baker will be distinguished visiting professor in SIU's department of speech correction during the winter term. Mr. Baird has been appointed distinguished visiting professor in the speech department for both the winter and spring terms.

SUMMER STUDY

'Round-the-World This Summer

College credit from Western Illinois University is offered for 11 tours this summer sponsored by the Illinois Education Association and the travel division of the National Education Association in cooperation with Western. A staff member from Western will direct each of the tours.

The tour name and courses in which credit is offered are as follows: for the first summer term—Canadian Rockies-Pacific Northwest, photography, geography, biology; New England-Canadian Maritime Provinces, photography, social science, English; for the first and second summer terms—'Round-the-World, music; 'Round-the-World South of the Equator, photography; Scandinavia and General Europe, one for social science and one for photography; General Europe, English; and for the second summer term—Alaska, geography; Mexico, photography, art, social science; Hawaii, biology; New England-Mari-

time Provinces, photography, education, biology.

For further information write to Dr. A. B. Roberts, Department B, Western Illinois University, Macomb.

The NEA Division of Travel Service, 1201 16th Street NW, Washington 6, D. C., offers many other tours—by various means of transportation, from various departure points. There are eight to Europe; five to Mexico; three each to South America, Hawaii, Alaska, around-the-world; four to Scandinavia; one each to Africa, Pacific Circle, and West Indies-Northern South America. Domestic tours include New England, Story of the West, Ranch in the Rockies, and Washington-United Nations Seminar, as well as those offered by Western.

For Science, Math Teachers

Summer institutes will be sponsored by the National Science Foundation at Eastern Illinois University, Southern Illinois University, and Illinois Institute of Technology.

SIU received $64,500 for an eight-weeks institute for high-school biology teachers. Participants will be eligible to receive a maximum of $1080 for living expenses and up to $80 travel allowance. Fifty applicants will be chosen to receive tuition scholarships. Deadline for applications is Feb. 16; for information, contact one of the co-directors—Dr. Harvey Fisher, chairman of the zoology department, and Dr. I. L. Shechmeister, associate professor of microbiology.

The session at Eastern is for 25 junior or senior high-school mathematics teachers, primarily those who did not have a math major as undergraduates. For applications and information, contact Dr. Lawrence Ringenberg, mathematics professor and director of the institute.

A $99,500 grant from the National Science Foundation will subsidize a program of studies for high-school teachers in mathematics, physics, and chemistry at Illinois Institute of Technology June 29 to Aug. 21. Dr. Haim Reingold, head of the mathematics department, will direct the program. Seventy-five applicants will be selected on the basis of previous training in their major and related fields, high-school teaching experience, and ability to profit from the program. Tuition will be free and each will be given a stipend of approximately $1000.

Dr. Fred Rolf will direct a science institute at Northern Illinois University.

Institutes also will be held at the University of Illinois, Washington University, Drake University, Indiana University, and University of Arkansas.

AND SO FORTH . . .

Study of Vocational Education

A two-year study of vocational and technical education in Illinois schools is being undertaken by the University of Illinois bureau of educational research for the Office of the Superintendent of Public Instruction. The study, conducted at both high-school and adult levels, will review the entire vocational-technical program as to nature of activities and their organization and financing.

Contacts in Europe

The American Overseas Educators Organization is organizing a European Group Charter Flight for members and teachers interested in making educational contacts while traveling in Europe.

The flight is round-trip from Detroit, Mich., to Frankfurt, Germany, at a cost of $365. Departure date is July 10, and the return date, leaving Frankfurt, is Aug. 19.

Opportunities for educational contacts made with individuals, institutions, organizations, etc., will be made available on an individual basis or an organized group basis.

Interested persons should contact Miss Olga E. Shuster, Chairman Flight Arrangements, American Overseas Educators Organization, 16213 Washburn, Detroit 21, Mich.

AOEO is composed of exchange and dependents schools teachers and educators who have taught overseas.

Gets More Top Students

Nearly half the freshmen who enrolled in September on the Urbana-Champaign campus of the University of Illinois came from the top quarter of their high-school classes. Almost 80 percent were from the top half.

Dr. C. W. Sanford, dean of admissions, pointing to a University of Illinois program to encourage intellectually gifted freshmen to attend their state university, called this fall's statistics "both interesting and exciting." At the same time, he emphasized that "the University is trying to help students of all levels of ability."

He stressed that the University has stepped up testing, counseling, and other kinds of aid for less highly qualified students, and does not deny admission to any Illinois high-school graduate who is able to present the required credits for entrance.

Russians Visit US Schools

"Why, they look just like the rest of us," exclaimed an eighth-grader in Washington, D. C., when a group of Russian educators entered his classroom. The visitors liked the simple demonstration tools they saw the students using to demonstrate principles of air pressure related to flight—a spool, a piece of paper, a tumbler, and a straw. The Russians were on a five-weeks tour of American schools and colleges during November and December.

The Russian educators and education officials are returning an official visit to Soviet schools made last spring by a group of American educators headed by US Commissioner of Education Lawrence G. Derthick.

Discuss Reorganization

New legislation is needed to finish the job of school district reorganization in Illinois, a group of 50 school administrators and school board members agreed at a meeting in November at Southern Illinois University. A stringent law requiring "effective and adequate" school districts

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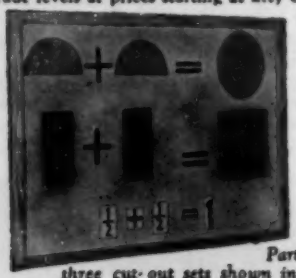

Parts of three cut-out sets shown in use Combined cost of all three sets — over 100 cut-outs in all — only $3.10

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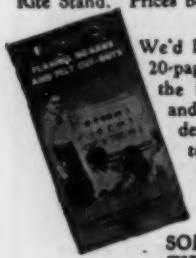

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covering every community in the state was recommended by S. M. Bishop of the Office of the Superintendent of Public Instruction. He also proposed the establishment of a state reviewing agency to investigate local school situations.

The trend in Illinois and the nation is toward community unit organization, with all 12 grades and with kindergarten and junior college where practical, he said.

The number of school districts in Illinois has been reduced about 85 percent since 1945. Factors which have aided reorganization, he said, are the promise of more and better education per tax dollar, good transportation, and the support of interested citizens. Hindrances include lack of understanding, local rivalries, and rural-urban jealousies.

The meeting for Southern Illinois school officials was sponsored by the Educational Council of 100 and the SIU departments of community development and educational administration and supervision.

Reports Placement Statistics

The average starting salary of Illinois State Normal University graduates with bachelor's degree was $222 higher last fall than the year before—$4190 compared with $3968.

The bureau of appointments reports ISNU had 11,375 requests for teachers during 1958, as compared with 10,831 in 1957 and 5468 five years ago. Most of the increase in demand came in requests for elementary, special education, and foreign language teachers.

Of 639 graduates from ISNU in 1958, 80 percent began teaching last fall. Only 1 percent still seek positions. Only one of eight alumni accepts a teaching position outside the state; approximately 25 percent of those go to California.

Helping Prepare for Rhetoric

Prof. Charles W. Roberts, chairman of freshman rhetoric instruction at the University of Illinois, will be on leave of absence from teaching duties during the entire spring semester and will devote full time to helping high schools gear their graduates to the more rigid rhetoric requirements they would face when entering the University.

For many years, the U. of I. has lent a "crutch" to under-prepared freshmen through "Rhetoric 100," a non-credit remedial course which students unable to carry college rhetoric must pass before being admitted to regular sections. The University has served notice it will discontinue this make-up course after the summer session of 1960.

At a Conference on School-University Relations in November, English teachers, principals, and counselors discussed the problem. High-school teachers consulted with former pupils who are attending the University to learn what further preparation would have helped them tackle rhetoric.

The teachers who participated had sent in "impromptu themes" written by senior class members. They had been graded by U. of I. rhetoric faculty, who discussed them and their grading system with the various teachers.

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Angel Stamps described in the November issue of ILLINOIS EDUCATION cost $2 for the pair rather than $2 for each stamp, as stated in the original announcement. The accompanying ink stamp pad is 50 cents extra.

Caddy-Imler Creations is a series of 48 long-play phonograph record tests designed to promote and diagnose the learning of the 390 basic arithmetic facts. There are eight 10-inch 33⅓ r.p.m. unbreakable vinyl records in a set; each record dictates a different group of facts. On each side of every record a group of combinations is dictated three different times as problems to be solved, and in a different order each time; the answers follow at short intervals, after a 12-second quiet period. They provide a quick, easy way of determining the arithmetic facts with which a child is having difficulty. Complete series of four sets costs $39.50, with discount for larger quantities of sets.

NewsRecord, a 15-minute monthly vinylite recording, will first appear this month. It includes news of worth-remembering events, prepared for intercom and classroom use at the junior- and senior-high levels. The recordings will be accompanied by teacher guides for detailed study by history and civics classes. Yearly subscriptions will be $18 postpaid.

Berloc "Quik-Change" sign is a low-priced, all-metal billboard with a complete set of metal letters and numbers for changing messages. Available in a wide variety of color combinations, styles, and sizes, it can be adapted to meet almost any school requirement.

Magnetic Visual Aids have been designed to be used with metal chalkboards or on any metal surface. The magnetic materials are sold in sets of capital letters, manuscript letters, numerals, counting shapes, fractional parts, and many others. Every set is die-cut from heavy pressed board with magnets fastened to the back of each piece. They are large and colorful and visible from the back of the classroom. They will be useful for demonstrations, drills, reviews, and even sign making. Prices start at $1. If metal chalkboards are not installed in the classroom, small portable metal chalkboards in two sizes (18 in. x 24 in. and 24 in. x 36 in.) are available. Sold by school supply distributors.

Cut-Out Letters for bulletin boards are made from durable cardboard and are appropriate for many purposes—signs, displays, and posters; schools can use them for stimulating interest in spelling, phonetics, and arithmetic. They come in red, black, green, yellow, blue, and white. Capital letters (two-inch) in sets of 180 letters, numbers, and signs and 1⅜ in.

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A toothbrushing kit is now available to supplement classroom use of dental health booklets which are supplied free through Bristol-Myers' educational program. Each kit—intended also for child welfare and civic groups planning dental health programs—includes a toothbrush and a tube of tooth paste; the carton has a game which dramatizes the reasons for dental health. Twenty kits cost $3. Booklets are available for grades one to three, four to six, and seven and above.

Language courses on 35mm color filmstrips will be available to schools, industry, and government through a 15-year agreement between Berlitz Publications, Inc., and the Pathescope Company of America. Forty lessons will be filmed on each subject, and six- to eight-minute records will accompany each filmstrip. Leading educators will work closely with Pathescope to ensure the suitability of the courses to the school curricula. The first language course to be produced in the series is French; it will be available about Jan. 15, and will be followed by Spanish, Italian, German, and Russian.

Audio and Visual

By DONALD A. INGLI
Director, Audio-Visual Aids
Southern Illinois University

Films

The Pony (Primary and intermediate. 29 minutes, black and white. McGraw-Hill Text Films)—An intriguing story of a brother and sister living on a huge wheat farm near Regina, Saskatchewan. For years Kathy and John have wanted a pony of their own; but, living on a completely mechanized farm, their father hasn't wanted unnecessary farm animals around. Unbeknown to their parents, who are away from home, the children buy a horse from a neighbor and hide it in the machine shed. From then on, they're busy trying to keep the secret from their parents. Before long, however, the secret is out. The film has a surprise ending on Christmas Eve, when Kathy and John receive a gift beyond their fondest dreams.

Development of Transportation (Intermediate and junior high. 11 minutes, black and white or color. Encyclopaedia Britannica Films)—To typify this pre-space age, the film opens with rocket launching and jet transport flying as compared to the days before we had fast means of transportation. In early times, lack of progress was often due to primitive people being hemmed in by natural barriers. As settlers came to the Western Hemisphere, they encountered all the difficulties of coping with mountain ranges, great dry plains, deserts, and the wilderness. Being ingenious, however, they used the rivers and built roads through the mountains. As steam power developed, canals and rail-

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roads were constructed; they were, in turn, followed by faster and more efficient means of travel brought about by the perfection of the gasoline engine. Planned for social studies, American history, and language arts, the film concludes with a look at a new frontier of transportation—atomic power and rockets reaching speeds of more than 18,000 miles per hour.

Our Earth (Intermediate and junior high. 11 minutes, black and white or color. Encyclopaedia Britannica Films)—This social studies film provides for a "general study of the earth"; shows how different peoples adapt themselves to their environments; and suggests that every country is a part of a great interdependent world. Divided into four sections, the film considers a) the physical composition of the earth, the ocean currents and winds that influence our climate; b) the need of irregular coast lines for good harbors; c) the plains, plateaus, and mountains and their effects upon agriculture; and d) the mineral resources of the earth and how we depend upon these riches. The chief value of this film would be to stimulate discussion at the beginning of a unit.

Ireland: The Land and the People (Intermediate. 11 minutes, black and white or color. Coronet Films)—We take an imaginary trip across Ireland to see its charming landscape, farms, and cities. Because many Americans are of Irish descent, it is interesting to study the people of this island country and also their past history. Various industries are pictured—digging peat for fuel, raising sheep for meat and wool, pasturing for dairy and beef cattle, and the use of deep harbors for shipping. Nearly half of the Irish live in cities and most of them have the native love of sports and games.

How Insects Help Us (Primary and intermediate. 11 minutes, black and white or color. Coronet Films)—The film follows Bill as he is working in his mother's flower garden. He notices the many insects that are harmful to the plants and mistakenly comes to the conclusion that all insects are of this kind. Later, he and his friend Jack go fishing and discover the existence of useful insects. Through the eye of the camera, the audience sees insects that destroy harmful ones, others that are food for fish and birds, bees that pollinate plants and produce honey, silkworms, and many others that are colorful and fascinating to observe. For beginning classes in science and nature study, this film will stimulate children to observe first-hand the many varieties of insects in our environment.

Handbooks

Some of the handbooks published by the Visual Instruction Bureau, University of Texas, Austin, are **Tear Sheets**—on the selection and preparation of materials for immediate and future use; **Bulletin Boards**—with suggestions and techniques for classroom teachers; **Felt Boards**—with ideas on prepared objects, cut-outs, and pictures; and **Lettering Techniques**—for hand and mechanical lettering. These handbooks sell for $1 each.

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13. **US Trails Map** is a colorful 17 in. x 22 in. map of historic United States trails, depicting events and historic places since 1595 as related in the American Adventure Series. Includes complete information on the graded corrective reading program. (Wheeler Publishing Co.)

19. **List of free teaching aids** on coal, coal mining, and the uses of coal. (National Coal Association)

36. **Origins of New England** folder on tour for summer, 1959. A study course on wheels covering American history from 1620 to 1820. University credit. Also folder on collegiate tours to Europe. Indicate which you prefer. (Arnold Tours)

38. **European Travel Courses,** summer, 1959, is a folder describing a variety of programs offering graduate, undergraduate, and/or in-service credit; also tours in Latin America and around the world. (Study Abroad, Inc.)

39. **Alphabet Seat Chart and Record** for manuscript and cursive writing. For lower grades. One copy only to a teacher. (Noble and Noble Publishers, Inc.)

46. **Catalog** of flannel boards and felt cut-outs. For all levels—first grade through high school. (Jacronda Manufacturing Co.)

49. **Brochure,** on a different kind of tour through Europe and a corner of Africa, describes itinerary and gives costs for 20 countries in 70 days, summer, 1959. Also shorter tours (four to nine weeks). (Europe Summer Tours)

62. **Handwriting Textbooks and Supplies** is a 16-page illustrated catalog of new manuscript and cursive writing textbooks and supplies, including paper, pens, etc. Prices are shown for all items, and order blank is included. *Free* Cursive Alphabet Desk Card for each pupil in your class; indicate number desired. Offer expires April 15. (The A. N. Palmer Co.)

63. **Brochure** gives the itineraries of four 12-country tours to Europe for the summer of 1959. It has 20 pages and is well illustrated. (Caravan Tours, Inc.)

82. **Samples** of cut-out letters for bulletin boards, signs, posters, and other uses. (Mutual Aids)

83. **Around-the-World Summer Air Cruise** brochure gives full particulars of tour offering six units of college credit by San Francisco State College. Conducted by Dr. Donald Castleberry, professor of government and social science, 60-day tour visits Hawaii, Japan, Hongkong, Saigon, Angkor Wat, Bangkok, Singapore, Ceylon, India, Teheran, Israel, Turkey, and Greece. (STOP Tours)

33. **Brochure** outlines assistance available to persons who have written or are considering writing a manuscript and wish to know how to go about having it published. (Greenwich Book Publishers)

84. **Folder,** describing six-weeks Hawaii Summer Program for teachers, gives costs, accommodations, courses available. (University Study Tours to Hawaii)

Calendar

JANUARY

26 to 30 — Annual Reading Institute; Temple University, Philadelphia, Pa.
26 to 28—National School Boards Association; San Francisco, Calif.
29 to 31—Illinois Music Educators Association (in conjunction with Illinois All-State Music Activity); University of Illinois.

FEBRUARY

7—Illinois Schoolmasters Club; Illinois Wesleyan University, Bloomington.
7 to 11—National Association of Secondary School Principals, NEA; Philadelphia.
8 to 10—Dedication Days; NEA Center, Washington, D.C.
12 to 14—American Association of Colleges for Teacher Education, NEA; Chicago.
12 to 14—United Business Education Association, NEA; Chicago.
14 to 18—American Association of School Administrators, NEA; Atlantic City, N.J.
28 to Mar. 4—Department of Elementary School Principals, NEA; Los Angeles.

MARCH

1 to 14—Association for Higher Education, NEA; Chicago.
1 to 5 — Association for Supervision and Curriculum Development, NEA; Cincinnati.
9 to 14—National Art Education Association, NEA; New York City.
17 and 18 — University-School Relations Conference; University of Illinois.
18 to 22—National Association of Women Deans and Counselors, NEA; Cleveland.
23 to 26—American Personnel and Guidance Association; Hotel Cleveland, Cleveland, Ohio.
31 to April 4—National Science Teachers Association, NEA; Atlantic City, N.J.

APRIL

1 to 4—National Council for Teachers of Mathematics, NEA; Dallas, Tex.
3—IEA Southwestern Division; East St. Louis and Edwardsville.
3 and 4—Junior High School Association of Illinois; University of Illinois.
4—Illinois Junior High School Principals Association; University of Illinois.
7 to 11—Council for Exceptional Children, NEA; Atlantic City, N.J.
10 to 11—North Central Regional conference, Department of Classroom Teachers, NEA; Detroit, Mich.

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Current Publications

Administration

The Elementary School Principalship—A Research Study. Department of Elementary School Principals, 1201 16th Street NW, Washington 6, D. C.; 1958. Paper. Illustrated. 259 pages. Price, $3.50; quantity rates.

This 37th yearbook of the DESP reports on the third study conducted by the NEA Research Division on the elementary principalship. Graphs and charts help show interesting statistics about responsibilities, characteristics, education, professional activities, status, etc., of the principal.

Geography

At Home Around the World, Delia Goetz, and **Eurasia,** Robert M. Glendinning. Ginn and Co., 205 West Wacker Drive, Chicago 6; 1958. Cloth. Illustrated. 308 and 438 pages, respectively. Prices, $3.96 and $4.96.

Beautiful color illustrations and many maps and diagrams help these elementary geography texts provide a rich background for understanding other lands. They are from the Lands and Peoples of the World series. The first book is for grade four and describes life of boys and girls in nine different places in the world, representing all different types of climatic and geographic areas. *Eurasia* is for grade six or seven.

Reading

Improving the Teaching of Reading by Teacher Experimentation, Leo C. Fay. Indiana University Bookstore, Bloomington, Ind.; 1958. Paper. 104 pages. Price, $1.

This bulletin, published by the university's Division of Research and Field Services, describes a number of experiments carried on by teachers who took a course, The Improvement of Reading in the Elementary School. There are sections on phonics, content, extensive reading, helping the handicapped reader, and one on reading in high school. An appendix is a unit of study about propaganda, designed for ninth-grade English, emphasizing reading skills.

Handbook for Instructors in Developmental Reading in Secondary School and College. Psychotechnics, Inc., 105 West Adams Street, Chicago 3; 1958. Paper. Illustrated. 101 pages. Price, $5.

Designed for instructors who have the opportunity to direct developmental reading courses, but have had no formal training in this field. The developmental approach is described, preparation for the program is discussed, and plans for both secondary and college programs are suggested.

Big Top, Sarah Derman. Benefic Press, Beckley-Cardy Co., 1900 North Narragansett, Chicago 39; 1958. Cloth. Illustrated. 64 pages. Price, $1.44.

One of the Easy-to-Read series, this attractive book is on the primer reading level, but should be of interest through grade two. Its main characters are an elephant and a water boy, who help the readers get a picture of many parts of Circus life.

Recreation

Book of American Indian Games, Allan A. Macfarlan. Association Press, 291 Broadway, New York 7; 1958. Cloth. Illustrated. 284 pages. Price, $3.95.

The 150 games described are for various age levels; there are instructive, amusing, active, quiet, and competitive games. Introductory parts help provide "insight into how the Indians of the Americas thought, lived, and played."

Handbook of Co-Ed Teen Activities, Edythe and David DeMarche. Association Press, 291 Broadway, New York 7; 1958. Cloth. Illustrated. 640 pages. Price, $7.95.

Helping solve the problems of adolescence is the aim of this book. There are tips on giving many types of parties, themes and seasonal activities, how to dance, 314 games of all types, refreshments. There are also sections on hobbies —such as dramatics, music, collecting, reading, hot rods—and participating in civic affairs.

Science

Science Explores Our World, Hugh Odishaw. Wesleyan University Press, Education Center, Columbus 16, Ohio; 1958. Paper. Illustrated. 48 pages. Price, 15 cents each; minimum order, 10 copies.

This report of International Geophysical Year programs, prepared for junior- and senior-high students, includes descriptions of new discoveries in various scientific areas, as reported by scientists and explorers. Several chapters explain the organization and purposes of IGY.

Social Studies

What We Know About "Race," Ashley Montagu. Anti-Defamation League of B'nai B'rith, 515 Madison Avenue, New York 22; 1958. Paper. Illustrated. 40 pages. Price, 25 cents.

To explain what "race" is and what it is not, the author examines physical differences between ethnic groups and analyzes the interrelationship of heredity, intelligence, and environment. Clever drawings illustrate this interesting booklet, one of a new series for youth groups and young adults. A teacher's guide is included.

America the Beautiful (poster). Sawyer's Inc., Public Relations Division, P. O. Box 490, Portland 7, Ore. Price, 25 cents; quantity rates.

Color pictures and information about the 49 states, Hawaii, and the District of Columbia make an attractive poster, 17 in. x 22 in., for social studies. Facts included concern capitals, largest cities, population, size, and state flower.

The Romance of Capitalism, Donald E. Cooke. John C. Winston Co., 1010 Arch Street, Philadelphia 7, Pa.; 1958. Cloth. Illustrated. 145 pages. Price, $4.95.

"The dramatic story of free enterprise written to give young people a better understanding and appreciation of our way of life." It begins with the 13th century. Many incidents have been "dramatized" to provide a readable and fascinating account of a part of our history. This very attractive book explains what capitalism is; how it began, grew, flourished, acquired enemies; and the problem it faces today.

American Capitalism: An Introduction for Young Citizens. Council for Advancement of Secondary Education, 1201 16th Street NW, Washington 6, D. C.; 1958. Paper. Illustrated. 116 pages. Price, 50 cents; quantity rates.

The first in the CASE Economic Literacy Series, which has been planned to help make economics an interesting and important part of the education of young people. The main questions answered in this unit are: Why have an economic organization? What is American capitalism? What is the role of the citizen in capitalism? Each chapter is followed by study activities. It is intended that teachers can use the unit with a minimum of curriculum change.

American Indian Ways of Life, Thorne Deuel. Illinois State Museum, Springfield; 1958. Paper. Illustrated. 76 pages. Price, 25 cents.

Charts, text, drawings, and photographs tell a chronological story of Indian groups which inhabited Illinois (starting with a theoretical date of 50,000 B. C.). Many parts of the Indian culture are described—their customs, weapons, activities, dress, etc.

The Defense We Can Afford, James F. Brownlee. Committee for Economic Development, 711 Fifth Avenue, New York 22; 1958. Paper. Illustrated. 31 pages. Free to schools, libraries, and organized study groups.

Discusses such matters as military and economic threats to our national security. The author, chairman of the CED Subcommittee on Economic Policies of National Security, points out that meeting these threats is a costly endeavor; he shows several ways which are within the means of an essentially healthy American economy.

Miscellaneous

The Story of Canning and Can Making—A Guide to Teachers in Elementary Schools. Home Economics Department, American Can Co., 100 Park Avenue, New York 17; 1958. Paper. Illustrated. 20 pages. Free.

This very attractive booklet begins with history of food preservation. In the discussion of canning, it is related to economics and industry. Many suggestions are given for correlating the subjects of food and canning into the curriculum. A diagram shows how cans are made. References and audio-visual materials are listed.

Looking In On Your School. National Congress of Parents and Teachers, 700 North Rush Street, Chicago 11; 1958. Paper. Illustrated. 32 pages. Price, 35 cents.

Each of 14 sections—concerning curriculum, services, materials, facilities, finance, teachers, the school board, PTA, etc.—contains a list of questions and suggested readings. The booklet will help PTAs study to improve schools.

Ethics for Everyday Living, Mary V. Neff. Science Research Associates, 57 West Grand Avenue, Chicago 10; 1958. Paper. Illustrated. 48 pages. Price, 50 cents.

"What Is Ethics?" asks the first chapter. This Life Adjustment Booklet continues by presenting principles of solving moral problems. A number of "cases" are described, and the reader is asked to decide on a conclusion.

Can Our Schools Get By With Less? NEA Research Division, 1201 16th Street NW, Washington 6, D. C.; 1958. Paper. 50 pages. Single copies free; in quantity, 25 cents each, with discounts.

In answer to a recent book by Roger A. Freeman, *School Needs in the Decade Ahead,* the division makes a point-by-point analysis of his "heavily weighted opinion, prejudice, and lack of understanding." He advocated policies and practices of which the profession would not approve and "selected statistics to prove a point instead of weighing all the evidence available."

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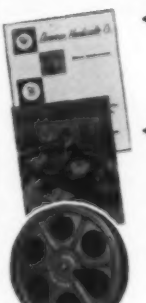

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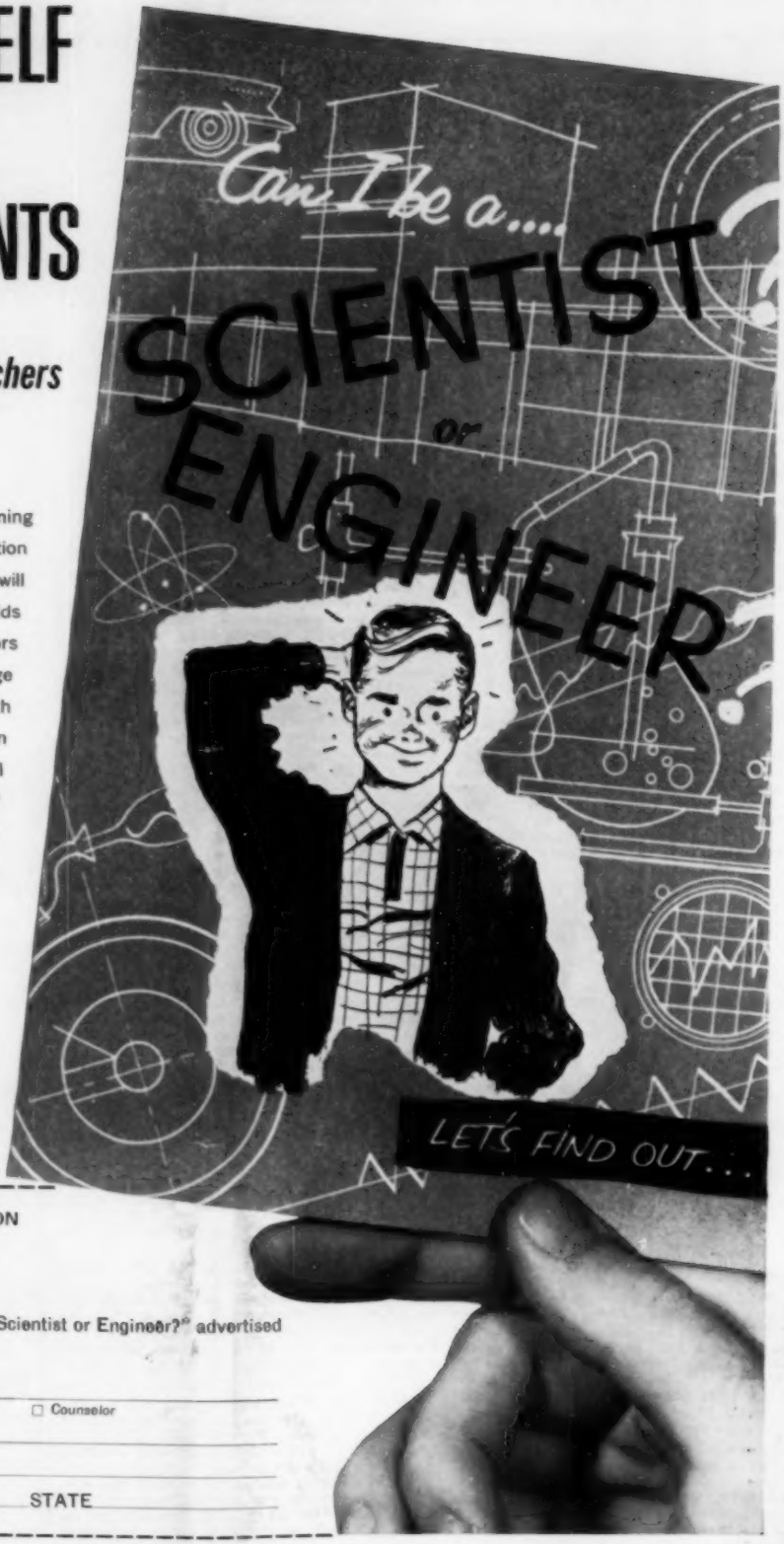

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